A Clinical Lecture
ON
THE AFTER-TREATMENT OF AN UNCOMPLICATED CASE OF EXTRACTION OF SENILE CATARACT.

Delivered at the Royal London Ophthalmic Hospital

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GENTLEMEN,—I have chosen as the subject of the clinical lecture to-day something which you cannot get in text-books. For the purpose of discussion I will divide the subject into three heads: (1) bandages and dressings; (2) local treatment; and (3) general treatment. We will discuss each of these heads separately. In the following remarks it is assumed that the operation has just been completed satisfactorily and the treatment is taken up from that point.

BANDAGES AND DRESSINGS.

There are two bandages used for intraocular operations—the double eye bandage and the single eye bandage. The double bandage is commonly known as "the Moorfields eye bandage." It consists of a simple piece of soft linen about two inches broad and of sufficient length to well cover both eyes. A small, oval piece is cut out from the lower border for the nose, and from each end pass tapes which enclose the ears and are thence continued as single bands round the head to meet on the forehead, where they are firmly tied over a piece of wool. The single eye bandage is a simple two-inch roller. Some people use one and a half inch, and for children that will do very well, but for adults a two-inch bandage is better. Remember that the eye is not altogether an easy thing to bandage. You must see that your bandage consists of stout material and that it is well selvedged. In applying your eye bandage remember one or two simple rules. Always start your bandage on the same side as that on which the operation has been done. For example, if the left eye has been operated on start on the left side, just above the ear, and include the top of the pad with the first turn round the head; fix by a second turn round the head and complete by bringing the bandage under the left ear and diagonally across the pad, where it is fastened by a good-sized safety-pin. Before passing under the ear give one or two little tugs, which will help to keep the bandage firmly applied; if you omit to do this you will find that the bandage will probably slip.

When you have applied the bandage to a patient after operation, never if possible let the patient walk away from the operating table. After intraocular operations there is danger in any physical exertion, therefore it is desirable that the patient should be carried to bed on a stretcher. If by chance you are so situated that the patient must walk always direct him to keep the mouth open, for if a patient has his mouth open it will be difficult for him to give a squeeze to his eye. In your private practice it is a good plan to do all your cataract cases—iridectomies are not so important—in the patient's bed, so that there is no necessity for moving the patient ofter the operation. There is a certain amount of nonsense talked about not being able to ensure asepsis when doing an operation in bed. I can assure you that if you take simple ordinary precautions, such as providing clean sheets, pillow slips, &c., you may feel quite comfortable on that score. Of course, a bed must be selected of a suitable height and with a low or removeable head-rail.

The length of time for which bandages should be used is important. The double eye bandage is employed for the first two or three days; its main object is to limit, as far as possible, the movement of the two eyes, which is an important matter. If a person has both eyes shut up he has less wish to try to look about than if only one eye is covered. One reason is that he knows he cannot. On the third day, when the wound will be fairly firmly closed, the double bandage is replaced by a single eye bandage. It is not wise to keep the double bandage applied longer than is necessary, as patients often suffer very much mentally and become very restless and depressed with both eyes shut up—upon that point I shall have more to say when discussing general treatment. The single eye bandage is generally continued after cataract extractions for from a week to ten days, according to the state of the wound and the general condition of the eye.

There are certain points which may help you to decide when the bandage should be taken off. First of all, there is the healing of the wound. Has the anterior chamber re-formed? and is the wound flat? It is seldom that the anterior chamber has not closed within 24 hours of the operation. In uncomplicated cases, therefore, which we are considering, nothing further need be said on this point. The flatness of the wound is an important point, and any tendency to bulging along the line of the scar is an indication to keep up pressure with the bandage. Again, after a cataract extraction the eye is reddened and watery, and because of the photophobia present it bears inspection badly. If the case is going on satisfactorily, in the course of a week the redness begins to disappear and the eye to get whiter; but if after ten days, and in some cases less, you find the eye instead of getting whiter tends rather to get redder, without any apparent cause such as iritis, that is a sign that your bandage had better come off. In this case the increasing redness shows that the patient is getting a general conjunctivitis, spreading from the area of congestion about the wound. When patients begin to get that they nearly always get itching also. Itching is a very troublesome thing, especially when you do not feel justified in taking the bandage off, and it becomes so intolerable to many patients that they can scarcely keep their hands from the eye. This simply means that a little seborrhœic eczema has been set up along the line of the lash follicles. A little boric ointment will often soothe the irritation and when you take the bandage off the conjunctivitis and itching quickly pass away.

After taking the bandage off the patient should wear dark, smoked glasses. The patient will often ask you, "May I have a white glass for the good eye and a dark glass for the other?" That is quite futile, for the nervous connexion between the two eyes is so intimate that exposure to a bright light by one eye causes both eyes to flinch and if one eye is inflamed the other eye is sympathetically irritable as well. The dark glasses should be worn both inside and outside the house for a week, and then outside the house only for a further week or more, until the eye is quite white, after which they may be left off altogether.

With regard to dressings, there is very little to be said. Some surgeons prefer to seal the eye up and to leave it undisturbed for some days after operation, but this is a practice which I think is very undesirable for reasons that you will gather in my remarks on treatment. There is nothing better than Gamgee tissue for an eye-pad. It is soft, comfortable, easily applied, and non-irritating. The chief point to remember about the pad is to cut it of ample size, so that when the bandage is applied the pressure is uniform in every direction.

LOCAL TREATMENT.

Before going into this I may say that you should do as little as possible to an eye after operation. There are four points in connexion with cataract extraction, which will greatly conduce to quick healing; and attention paid to them will often save much anxiety in the after-treatment. These are: First, a clean section in the limbus of the cornea, not bringing your knife out of the cornea nor entering into the cornea. Secondly, the section should be large, so that the lens comes out easily. The third point, equally important, is that you should make a nice conjunctival flap. If you secure a good flap the wound soon closes, which means that the anterior chamber is soon re-formed with the minimum of risk as regards sepsis from without, and with this further great advantage, that with the re-formation of the anterior chamber the iris can be put under the influence of a mydriatic. The latter is very important, as I shall show you shortly. The fourth point is a thorough replacement of the iris, or its cut edges if an iridectomy has been performed, so that there is no engagement of the iris in the wound. That, of course, is more easily said than done in many cases; and even if the iris is thoroughly replaced some slight entanglement may subsequently occur.

Nevertheless, strict attention to this point is usually rewarded amply.

I may now pass on to the details of local treatment and the first point I shall emphasise is the importance of securing an early dilatation of the pupil. First of all, remember that after cataract extraction a certain amount of lens detritus is usually left in the wound, and this being irritating and sticky, the iris, which is a very delicate membrane and has been to a certain extent bruised and injured in the course of the operation, is apt to become inflamed and rapidly to form adhesions to the lens capsule which is left behind. The iris is, of course, contracted when the anterior chamber is empty, and if when the chamber is re-formed it is allowed to remain so, it will speedily become impossible to dilate it, and we know by experience that a pupil remaining contracted after extraction is almost invariably followed by a troublesome iritis which may lead to ultimate failure as the result. As a matter of fact, if you do not get a pupil dilated within 48 hours after extraction you will rarely secure a satisfactory dilatation. Therefore your object is to get the anterior chamber closed as quickly as possible, so that drugs may act on the iris, for remember that no mydriatic will avail until the anterior chamber has been re-formed. Nevertheless, it is a wise plan to instil sterile atropine drops before applying the dressing after operation, as, if the anterior chamber is closed within a few hours, the action of the atropine is often still sufficient to bring about a dilatation of the pupil. If you do that and if you have thoroughly replaced the iris and got a good flap and made a clean large section, in the majority of cases you will find next morning that the pupil is nicely dilated, and you can go away happy in the consciousness that the case will probably give no more anxiety.

If the pupil is not well dilated the day after operation a 1 per cent. solution of atropine should be instilled at least three times during the second day, and this measure will often secure good results. If the pupil is found strongly contracted on the second day, it is advisable to employ a 2 per cent. solution of atropine, combined with a 4 per cent. solution of cocaine, watching carefully for any symptoms of toxæmia, and reducing the dose as soon as dilatation has been produced. The cocaine is useful, as the atropine seems to act more effectively when combined with it. If on the third day there is still no response and the pupil remains strongly contracted, the surgeon must resign himself to a prolonged convalescence, and usually there will be well-marked signs of commencing iritis. You must remember, however, that there are a certain number of cases in which iritis will occur, no matter how great the care, skill, and attention to detail that has been bestowed, and this is particularly the case in old gouty patients. Once the pupil is dilated, atropine should still be used daily until the eye is white and all danger of iritis is past, and until the absorption of the lens detritus is complete. When you are satisfied on these points leave off the atropine.

The next point is that of dressing the case. In carrying this out you need to do very little except trickle a few drops of a weak solution of boric acid through the lids and apply atropine and pad, as above described. The maxim for all your cases should be, "Look on and watch; do not disturb." As much as possible let the eye alone, and during the first 24 hours do not disturb it at all except for the purpose of putting a drop of atropine between the lids. On the second day just gently open the lids and look, but do not throw in a strong beam of light, and instil a little boric acid lotion through the lids, together with a drop of atropine, and then bandage up again. This light inspection should be quite sufficient to enable the surgeon to satisfy himself of the progress of the case, and he will gain information on the following cardinal points. First, there should be absence of pain; secondly, the anterior chamber should be re-formed; thirdly, the pupil should be dilated; fourthly, the corneal reflex should be bright; and fifthly, there should be no puffiness of the lids. If all these conditions are present he may leave the case quite free from all anxiety. With regard to these five points, I shall speak again later about pain, whilst I have already referred to the second and third points. The fourth and fifth points—namely, a grey or dull corneal reflex and the presence of some puffiness of the lids—are sure signs of commencing serious inflammation, and are often, indeed, the first symptoms of septic infection.

After the second day the patient will probably open the eye better; there will be less tenderness and photophobia, and if all goes well the surgeon will be relieved of all anxiety at the end of a week. Another point to which I wish to draw your attention is the hobbling of the hand on the same side as that of the operated eye. To do this a clove hitch is fastened round the wrist with a bandage, and the other end is passed under the bedclothes and attached to the foot of the bed. At the same time do not trouble to hobble both hands, for few patients can stand that. Probably a patient will not have both hands restricted five minutes before he has such a violent itching at the tip of his nose, or somewhere on his face, that it will drive him almost frantic. Patients will sometimes ask you not to hobble the hand, because to scratch or touch the eye is the last thing they would think of. Of course, no patient would willingly or knowingly do so, but the dangerous time is that between waking and sleeping, when there is a consciousness of itching or tickling, whilst the patient is not sufficiently awake to realise the danger which would follow satisfying the desire. If a patient wants to scratch or rub his right eye he will instinctively do so with his right hand, and if he wants to rub his left eye he will use his left hand—that is a thing for which everybody uses the left hand. Do not hobble the hand close by the side but give it a little play, such as will enable the patient to bring it level with the waist, and you can take the hobble off during feeding time and at other times of the day when not resting. It is important to remember that if the patient slips down in bed, or the bed is raised, the length of the hobble must be readjusted accordingly. You must not think I am fussy in attaching importance to the hobble. You would scarcely believe how many cases of intraocular operations I have seen ruined, after well performed operations, simply through neglect of this simple precaution. After the first week it is usually safe to leave off the hobble in an uncomplicated case, but no hard and fast rule can be laid down. Instead of the bandage a light splint of cardboard, fastened over the flexor surface of the elbow, will answer the same purpose if preferred.

GENERAL TREATMENT.

Now with regard to general treatment. The first point is in regard to shock. It is a rather extraordinary thing that a great degree of shock sometimes follows extraction of cataract, especially in old people. I have had two cases in the last two years, occurring in old ladies, both of whom went off their mental balance after the operation. One of them was so far affected that she never recovered, and died—yet she was quite well before the operation and she bore the actual operation quite satisfactorily. The other patient recovered eventually, but only after some time. In neither of these cases had there been anything to upset the patient, either previously to or during the operation. However, such extreme cases of shock are very exceptional and I only mention them to emphasise the point that after an extraction operation you should keep the patient very quiet, and it is often best not to allow visitors for the first day or two.

The next, and a more important point, is the pain and restlessness after operation. You should never leave your case after the operation is completed without telling the patient and making him fully realise that he is going to have pain. No matter how skilfully the operation is done, as soon as the effect of the cocaine wears off there will be pain. If the operation is done in the morning, the pain—sometimes rather severe in character—will last during the rest of the day. It is curious, but one can really say exactly (or almost to an hour) how long that pain is going to last if the case is going to do well. Supposing the operation is completed by 10 o'clock in the morning, the pain will have gone, or nearly gone, by 6 o'clock in the evening—that will occur almost like clock-work. When does the pain cease, and why? The pain ceases when the anterior chamber has been completely re-formed, and it is whilst the chamber is re-forming that the pain lasts. The pain arises from the iris, not from the wound. The iris is an extremely delicate membrane, and during the operation it has been bruised or cut, or more or less disturbed. Pain persists until the iris finds itself once more in its right medium. It is at first pressed on by the cornea in front and by the vitreous behind, but as soon as the conjunctival flap is sealed down at its edges in comes the aqueous, pressure is relieved, and away goes the pain.

Now it is most important, even if the pain has practically all gone by 6 o'clock and the patient says he feels better, that you should never leave a patient like that for the night. It is of the utmost importance that your patient should have a good night. If the first night after the operation is a restless one it may react very unfavourably on the eye and bring on an iritis which might have been avoided. I make it an invariable rule to order a sedative for all patients the first night after the operation, which is given without hesitation if the patient cannot sleep or is at all restless. You must use your own discretion as to what particular sedative you will employ. If you have had a bad operation on an unhealthy eye, from which vitreous has been lost, absolute quiet is necessary, and no matter how composed the patient seems give an injection of morphine, unless, of course, there is some constitutional objection to this drug. In other cases avoid morphine, but order a sedative of sufficient power to insure quiet, even if it does not produce sleep. Veronal, sulphonal, and trional are not sufficiently reliable for these cases; you must have something which will act quickly and be efficacious, and personally I prefer a mixture of 20 grains of chloral hydrate and 20 grains of bromide of potassium, made up with a little tincture of oranges and camphor water.

I may say incidentally that the restlessness is often caused by the double bandage, a point which I said I should refer to again. The reason is, that many of these patients suffer from "night terrors" if both eyes are bound up—and I can quite understand it. The patient is quite blind for the time being, and in the night the furniture may creak or the door be blown to and the patient imagines someone is there, yet he knows he must not get up and cannot even look round and satisfy his curiosity, and the result may be that he becomes panic stricken. I had a case of the kind in a medical man some time ago. I had given particular instructions to the nurse to be on the look out because he was very excitable, but somehow he got a panic in the night, screamed like a delirious man, tore the bandages off both eyes, and jumped out of bed. It was the nurse's fault because she had been particularly told not to leave him, which instruction she disobeyed. This case serves to bring home another point—viz., that unless you are quite confident about your patient order a night nurse for the first two or three nights after a cataract extraction. It does not mean a very large expense and it is a great safeguard. During the day the presence of people about the room and the noise of surrounding life will prevent any occurrence of this sort, and so, too, in hospitals one does not encounter much difficulty, but you will usually find a night nurse appreciated by your private patients.

As I have told you, the pain should disappear in the first day; if it returns it always means mischief. Your patient should be free from real pain after the first day, although I do not mean that he will have no discomfort afterwards; but acute pain after the first day means the onset of inflammatory trouble, and must be regarded with apprehension.

It is very desirable to keep patients in bed for a few days after operation, simply because by doing so you can keep them absolutely quiet; but if the patient be old you must be on the look-out for those complications which are apt to ensue from the patient being on the back for any length of time, especially hypostatic congestion. Watch the pulse and have the temperature taken regularly. As a routine measure I insist on the nurse taking the temperature night and morning in old people and recording the pulse-rate, and she is also required to note the presence of any warning symptoms, such as cough. If possible I keep patients in bed for a week, but it is impossible to lay down any rule, and you will sometimes find flatulency a very troublesome complication in old patients if they are kept on their backs for more than a day or two. An important matter in connexion with keeping such patients in bed is the question of micturition and defæcation. Unless you have this clearly decided in your mind it may give you trouble. Should you insist on a patient who has had cataract extraction passing his motions and his water lying down? To that I emphatically answer "No," unless you find that the patient has no difficulty in doing so. It is far less dangerous to let the patient get up, or sit up, for these purposes, than to lie on the back and strain. If both eyes are bandaged I insist on the nurse being in the room to help and guide the patient, directing him at the same time to keep the mouth open while performing any muscular action whatever. As a rule I avoid giving purgatives until the second evening after the operation. If care has been taken to ensure a thorough evacuation of the bowels before operation this will be quite soon enough, and it is not desirable to disturb the patient more than can be helped before this time.

Now a word about diet. There is very little to say in this respect. The only point of importance is to avoid giving the patient much to do in the way of mastication during the first day or two after the operation. The food during this time should be given minced or pounded or fluid, but much fluid food is apt to induce flatulency, and after the second day, if all is going well, the patient may be put on ordinary diet.

Lastly, I cannot over-estimate the importance in intraocular cases which attaches to a good nurse. There is, perhaps, a feeling amongst nurses that ophthalmic cases do not require much nursing, but it is only prevalent amongst those who have not done such nursing. Those best qualified to judge know that no class of patients requires more watching and care than intraocular operation cases, for in none does success depend more on attention to detail, and in none is the boundary line between success and failure more easily overstepped.

A Clinical Lecture
ON
PROSTATECTOMY.

Delivered in the Western Infirmary, Glasgow, on March 8th, 1909,

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GENTLEMEN,—A week ago you examined with me a patient, aged 60 years, suffering from the usual effects of prostatic hypertrophy, and on that occasion we found that the prostate was apparently of the "small, hard" variety, the seat of the so-called "fibrous" type of hypertrophy. For a week after the date of your seeing him the patient was kept in bed and given urotropine and strychnine in preparation for operation, which was carried out on Saturday last (March 6th). He is at present making excellent progress and promises an uneventful recovery. The prostate of this patient I show you now (see illustration). It was removed by the operation which I first described in THE LANCET of

Anterior aspect of prostate gland after removal, with small intravesical lobe.

April 14th, 1894.[1] Its object is the removal of the prostate without interference with the integrity of either the prostatic urethra or the neck of the bladder, and its method of performance a combination of the "suprapubic" (better termed "vesical") and the "perineal."

In the earlier days of prostatectomy preservation of the urethra was one of the main objects of the operation. Damage to, or removal of, the urethra was an accident to be guarded against in performing prostatectomy. But from time to time that accident happened. It happened in McGill's pioneer hands, and in the hands of many of his successors, and experience ultimately showed that the accident was trivial, so far, at least, as risk to life was concerned. The recognition of that fact was important, for removal of the prostate becomes a very easy matter when the operator is not concerned with the preservation of the urethra. Ultimately removal of the urethra *with* the prostate became (in the practice of certain, but not all, surgeons) a formal feature of one of the methods of performing prostatectomy—viz., that by the "suprapubic" or "vesical" route. That method, removal of the prostate and the prostatic urethra, and often the sphincter vesicæ as well, has indeed been during the past few years the fashionable operation for prostatic hypertrophy. Its results in certain cases are excellent; in others they are less fortunate. None of the various methods of performing prostatectomy is entirely free from occasional imperfection, but of them all the "suprapubic" or "vesical" operation is, in my experience, that most liable to ultimate issues contemplated neither by patient nor surgeon. Uncertainty of result has, indeed, led me to relegate its use to those cases in which no other operation is possible—namely, cases with large and more or less pedunculated intravesical prostatic growth. Despite its success in some cases, confidence in recommending it to a patient has become difficult in the face of the not infrequent experience of seeing, both in my own cases and in those of other operators, the following three resulting conditions.

1. *Urinary frequency, often with pain, and hæmaturia and pyuria, these symptoms being due to the deposit of phosphatic calculous material on the rough surface of the cavity from which the prostate was enucleated.*—This is a common result of the operation, necessitating repeated washings out. In many cases such lavage ultimately removes the trouble in a few weeks, in others the patient suffers for months, and in a few for several years. Indeed, I know of several cases in which after years the deposit is still re-forming.

2. *Failure of restoration of voluntary micturition.*—This is an occasional disappointment in prostatectomy, no matter what method is employed, and is probably due to vesical atony, the result possibly of too long delay in advising operation. In suprapubic enucleation, however, in certain cases in which the prostatic urethra and vesical neck are brought away with the prostate, there occurs after a time distortion with stricture or obstruction of the urinary channel. This condition may or may not be of itself the cause of persistence of retention. On that point I express no opinion. What experience has shown me, however, is this, that such distortion and stricture may render it exceedingly difficult (impossible without anæsthetics in several cases of which I have knowledge) to pass a catheter to relieve retention. In such cases the patient, who before operation used his catheter easily, becomes after operation either entirely dependent on his medical attendant for relief or assumes in his condition the phase of distension with passive overflow.

3. The most distressing of the three unfortunate results, however, is the conversion by the operation of a chronic prostatic retention patient, relieving himself by catheter, into a case of incontinence condemned to the permanent wearing of a rubber urinal. That is the occasional ultimate result of suprapubic enucleation in the course of which prostatic urethra and vesical sphincter have been sacrificed.

Let me now describe to you the operation carried out on the patient whose case we have been considering, and Dr. Charles C. Cuthbert and Dr. William Rankin, who assisted me and are present to-day, will aid my memory should it err in any of the details.

1. *Suprapubic cystotomy.*—Dr. M. J. Stewart having anæsthetised the patient and a large catheter having been passed into the bladder, I opened the bladder over the pubes. That should be the first step in every prostatectomy, no matter what procedure is to follow. It secures the following things. (*a*) Detection and removal of calculi which not infrequently accompany enlargement of the prostate. They can, of course, be removed by the perineal route. As the object of this operation is, however, the preservation intact of the urethra, that course was here barred. Further, when the perineal operation pure and simple is performed calculi may escape detection by the tractor or by the finger (which in a fat patient barely enters the neck of the bladder), while their extraction may lead to laceration of the urethra and sphincter vesicæ. (*b*) A more accurate bimanual examination for the detection of prostatic carcinoma than can be made in any other way. (*c*) A route for bladder drainage and lavage during convalescence conveniently placed for cleansing and remote from the risk of fæcal contamination. (*d*) Detection and removal of pedunculated intravesical prostatic "lobes." In this case there existed a small isolated "lobe" which had grown from the right lateral lobe of the prostate upward between the fibres of the sphincter vesicæ, close to the outlet of the bladder. Over this "lobe" I snipped the mucous membrane with scissors and shelled out the lobe with my fingers, and it now lies beside the excised prostate. Such intravesical "lobes" may be removed, as this one was, at the time of their discovery. If, however, they are of such size that their enucleation must of necessity open the base of the bladder, removal may with advantage be delayed, as I advocated in 1894, till the perineal wound is healed, partially or wholly. (*e*) Preservation intact of bladder floor (including sphincter vesicæ) and of prostatic urethra during the further steps of the operation. That is the really important reason for the suprapubic cystotomy. By no other method can that end be uniformly attained, though it may be occasionally secured as a fortunate chance by the purely perineal operation.

2. *Exposure of prostate.*—Having placed the patient in the "lithotomy position" and placed my left forefinger in the rectum, I opened the perineum by an incision crossing its centre, more or less transversely, from near one ischial tuberosity to the other. (Any incision may be employed, but I still adhere to that which I used at first, and to which a distinguished American surgeon subsequently gave the excellent name the "inverted Y." The leg of the "Y" is made first and the transversely extending arms are added to any desired length, on one or both sides.) The bulbocavernous muscle having been displaced forwards and the anal sphincter backwards, dissection was continued till the base of the triangular ligament and the anterior margins of the levatores ani were exposed. The former having been pulled forwards by a retractor, and the latter incised to the extent of an inch, the rectum was carefully separated from the prostatic capsule and base of the bladder, pushed back into the hollow of the sacrum, and protected by a thick square gauze swab. Up to this point in the operation rubber gloves had been worn. Dr. Cuthbert and I now removed our gloves to permit of the keener touch necessary in the coöperation of our hands to follow, and in my own case to get rid of the rectal contamination of my left hand.

3. *Removal of prostate.*—Dr. Cuthbert, having passed two fingers into the bladder through the suprapubic wound, pushed the prostate from above well out into the perineal wound, the margins of which Dr. Rankin was holding apart with retractors. Having got the prostate well in view and having identified the catheter in the urethra entering its apex, I opened the capsule of the prostate. (For this purpose that incision—vertical, transverse, crucial, double, T or H shaped—should be chosen which appears best suited to the form of the prostate concerned.) In this case I began with a vertical cut, made a second parallel with the first, and ultimately converted the two into an H by a third cut. Making use of my fingers and a pair of scissors, and guided by Dr. Cuthbert's fingers in the bladder, and the catheter in the urethra, I removed the prostate as you see it. *At no stage of the operation was either bladder or urethra wounded.* When the prostate was removed from its capsule we had a full view of the inferior wall of the prostatic urethra distended by the catheter, and of the external aspect of the posterior part of the sphincter vesicæ encircling the neck of the bladder. The perineal wound was finally lightly packed with gauze, and the catheter was withdrawn. This packing is advisable, less

[1] A Method of Excising the Prostate, THE LANCET, April 14th, 1894, p. 926.

to check hæmorrhage than to prevent the entrance of fæces during defæcation and of urine which may trickle down on either side of the scrotum from the suprapubic opening. It should, however, be done lightly. Packing pushed hard against the exposed urethral floor may cause sloughing of that structure at the end of a few days.

This particular prostate has been removed by the method which I am accustomed to term "opening the book at the middle," and unfolding the two halves from off the urethra and bladder neck. It is sometimes more suitable to "slit the book up the back" and then detach the halves separately. Finally, there are cases in which, in order to preserve the urethra and sphincter vesicæ, it is necessary to remove the prostate piecemeal, and even in very hard prostates to leave small portions. That is another way of saying, what I have always maintained, that a partial (while efficient) prostatectomy may in certain cases be a much better thing for the patient than a so-called total prostatectomy.

In conclusion, I may say that now that we know that prostatic patients develop more or less immunity to the toxins in their urine I feel less concerned than I did 15 years ago as to the risks of an accidental wound of the urethra or bladder floor in the way of sepsis in the "dead space" of the evacuated prostatic capsule. That being so, you may ask why I did not remove this prostate by the "perineal" operation, pure and simple, instead of by this combined method. My answer is that I prefer the operation which I have described to you as carried out in this case for a three-fold reason: (1) because of the reasons I have just given you for making the first step in all prostatectomies a suprapubic cystotomy; (2) because while I may be less concerned than formerly to avoid an accidental wound of urethra or bladder, such an accident occurs in only a proportion of cases; and (3) when it does occur the wound is a small one, easily detected, and at once limited in its extension (indeed, in certain cases I have closed it by suture). That is a very different thing with respect to ultimate effects on the urethra and bladder neck from the wound purposely made in the course of the ordinary "perineal" enucleation in the urethra for the purpose of passing the finger or a tractor into the bladder in order to pull the prostate down into the perineum. Such a wound looks in diagrammatic illustrations of the perineal operation a wholly innocent and limited opening and may be so in actual practice in certain skilled hands. If, however, you will observe the operation in course of performance, as opportunity offers, you will verify for yourselves what I tell you now—namely, that the incision in the urethra seldom retains its original dimensions as the operation proceeds. In the majority of instances, under the action of the pulling finger or tractor, it steadily enlarges until the integrity of the urethra is seriously compromised, and in not a few cases, as the removal of the prostate gradually leaves urethra and bladder neck denuded of support, the original incision becomes an extensive and irregular rent extending partially or wholly through the sphincter vesicæ and bladder neck. Such an operation has little to commend it to one who believes, as I do, that the complete title to position in surgical practice of prostatectomy, not yet fully accorded, depends largely on the preservation during the operation of the bladder neck and prostatic urethra.

DEATH FROM PRIVATION.—A terrible story of a nocturnal *habitué* of the Embankment was told at an inquest held on his body by Dr. F. J. Waldo at the City Coroner's Court on May 21st. A constable had found the man four days before lying, unable to move, on a seat. He was taken to an infirmary, where he was found to be dying from inanition due to hunger, exposure, and neglect. At the inquest a police sergeant stated that no Act existed to compel a man to be cleansed against his will, though it would be a good thing for the public if cleansing were made obligatory upon the dirty persons who use the Embankment as a sleeping-place. These unfortunate tramps could not be arrested, but "the police had to awaken people who slept on the Embankment in case they were dead," which forms the most pathetic bull we remember to have heard. The medical evidence ascribed death to heart failure due to the causes already stated.

ON AUTO-INOCULATION AND RE-INFECTION OF SYPHILIS.[1]

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1.—*Auto-inoculation of Primary Chancres.*

IT is often stated as a character of primary syphilitic sores that they cannot be inoculated on the same individual. Although clinical and experimental evidence agrees in pointing to a rapid spread of the syphilitic virus throughout the system it would indeed be strange were it true that auto-inoculation is impossible after the sore has existed but a few days. It is a fairly frequent occurrence to meet with two indurated chancres situated on parts of the body which are not directly continuous but which touch each other from time to time—for example, the penis and scrotum, the two labia majora and minora in women, the upper and lower lip, on the face, &c. These are in all probability examples of auto-inoculation, but they are open to the explanation of simultaneous infection with the spirochæta in two places. For instance, a patient of mine came under care five weeks after two large indurated chancres had been first noticed. One was placed on the outer skin of the penis, the other on the scrotal skin exactly where the parts were liable to touch. His belief was that only a short interval, if any, had elapsed between the appearances of the two sores.

Mr. Waren Tay has reported the case of a man with a copious secondary eruption and an indurated chancre on the prepuce. On the inner side of the thigh where the parts touched were three dusky indurated sores. He stated that about two weeks had elapsed between the appearance of the penile and thigh chancres. Such evidence takes us but a short way, and were no other forthcoming one might be ready to accept the dogmatic assertion of one of the most recent writers on the subject.

Colonel F. J. Lambkin, R.A.M.C.,[2] says of the primary chancre: "It is not readily auto-inoculable, and *only so during the first ten days of its existence.*" He proved the possibility of auto-inoculation from the penis on soldiers within ten days of the existence of the primary sore. "After ten days I found it impossible to reproduce an identical sore or anything like it; as a rule, a small inflammatory pustule was the only result. From later experiments made by myself I find that mercurialisation of the patient renders auto-inoculation impossible, even during the first ten days."

The following cases, by no means all that have come under my observation, prove that nature may provide better experiments than those of our own devising.

CASE 1.—A single woman, aged 25 years, came under my care with a typical indurated chancre of the lower lip, accompanied by the usual submaxillary bubo. A full three weeks later another, but smaller, indurated chancre developed on the upper lip in an exactly corresponding position.

CASE 2.—A man after exposure to risk had an indurated chancre on the penis with inguinal bubo. Nearly a month later—i.e., between three and four weeks—a sore developed on the last phalanx of his right thumb. This gradually assumed the circular raised form of an infecting chancre and was attended by an axillary bubo. A syphilitic eruption on the trunk followed quickly, with condylomata about the anus and sores on the tongue. It cannot be doubted that he inoculated the thumb from the penile chancre, and the length of the interval was absolutely certain. I believe he was taking mercury during the weeks referred to.

CASE 3.—A patient at the Lock Hospital had a large indurated chancre on the end of his penis in October, 1898. In December (fully two months later), after he had been foolish enough to continue poulticing the organ, a second indurated chancre developed at the root of his penis, several inches away from the first sore. There was a large bubo and a papular eruption developed. He had no proper treatment, and in May following—i.e., no less than eight to nine months after the first inoculation—both chancres were still large and indurated. The sore which appeared the latest

[1] A paper read before the Surgical Section of the Royal Society of Medicine on May 11th, 1909.
[2] System of Syphilis, vol. i., p. 190.

was the most active and angry-looking of the two. The remarkable persistence of the two chancres is noteworthy and very unusual.

CASE 4.—This is the most remarkable instance of auto-inoculation I have ever seen. It proves that even when general secondary symptoms have appeared a typical fresh chancre with bubo may develop. The facts are undoubted as I was seeing the patient every week. A man came to the Lock Hospital with an unusually large hard chancre of the prepuce which had existed some little time and was attended with a characteristic bubo. He was put on internal mercurial treatment, but this was not commenced in time to prevent a secondary rash and sore throat. He attended regularly for two months and then he drew my attention to a "sore finger," which he attributed to a scratch received in his daily occupation, that of a wire-worker. It should be mentioned that he had dressed the sore of the penis every day. On his right index finger was a commencing sore which looked most like a chancre; in the corresponding axilla the glands were already enlarged. In the next week or two this second sore became larger, circular, and indurated, long, hard lymphatic cords developed up the arm, and the axillary bubo became very marked. With continuance of the mercurial treatment all the symptoms ultimately subsided.

These cases of auto-inoculation are interesting in several respects. The nearer to the date of first infection that the second inoculation occurs the more likely is it to succeed in producing a true chancre with glandular bubo. In this, I think, surgeons will agree with Finger and Landsteiner who say: "Re-inoculation is successful in proportion to its proximity, in point of time, to the primary inoculation. If general infection is not yet complete a typical chancre can be produced, but from the time when constitutional symptoms appear it becomes more difficult to succeed. During the secondary period the result has some resemblance to a secondary papule." Cases 2, 3, and 4 that I have narrated prove that the second sore even from a late auto-inoculation may, however, have the usual features of a Hunterian chancre and in no way resemble a secondary papule, as stated by Finger and Landsteiner. Cases 2 and 4 are noteworthy from the fact that the chancres were so far apart—on the genital region and the finger and thumb respectively. The length of time that elapsed in Case 4, a full eight weeks between the appearance of the chancres, makes it possibly unique.

It is stated by many workers at the pathology of syphilis that the spirochæta pallida is found with the greatest difficulty, if at all, in well indurated chancres. Dr. Mackintosh tells me that he made an exhaustive examination of sections of seven indurated chancres without being able to demonstrate the spirochæta. In the early stage of the sore it can often be found. The local use of mercurial preparations, the intramuscular injection of mercury, the administration of it by the mouth, all seem to hasten the disappearance of the spirochæta from the primary sore. In Case 4 it is obvious that although the patient was under mercury for some weeks and the indurated sore, which was of quite exceptional size, was improving, yet the virus was transmitted to the finger.

There is an obvious conflict of evidence as to the persistence of the virus in a primary sore between pathological and clinical observers. But the clinical evidence as to the danger of infection from an indurated chancre, even when its secretion is practically *nil* or when the sore has almost disappeared, is so strong that it will take much more to discredit it than these observations as to the behaviour of the spirochæta, interesting though they are.

One recent writer[3] has stated his belief that in every case of inoculation of the syphilitic virus there is an abrasion of the epithelial surface, whether skin or mucous membrane, which allows the spirochæta to enter. This is a point of considerable practical importance, but one hard to solve, or rather it is hard to prove to those who picture a pre-existing fissure at the site of every chancre that none was present. Here, again, we may have to disregard experimental evidence derived from inoculation of chimpanzees. I can only express my firm belief in the frequent entrance of the syphilitic virus through unabraded or normal skin and mucous membrane, and I think the cases of auto-inoculation certainly support this belief.

[3] Dr. F. W. Andrewes: System of Syphilis, vol. i.

2. *Re-infection with Syphilis.*

Recorded evidence of two attacks of syphilis in the same individual is by no means abundant, and what there is often will not bear scrutiny, as essential points are wanting in many of the case-narratives. Where, for example, the observer narrates the occurrence of primary and secondary symptoms, followed after some years by the development of a fresh sore which was called a chancre and was treated with mercury, and claims this as proof of re-infection, it is plain that he proves nothing whatever. The recurrent pseudo-indurated chancre, to which my father and Professor Fournier first drew attention, is easily mistaken for a second infection. I have seen many cases of this recurrent induration at varying periods from the original attack, and have come to regard it as a tertiary infiltration of tissues at or close to the site of the primary chancre. My experience has been that glandular enlargement—i.e., any form of bubo—hardly ever accompanies it, and that the induration yields more readily to iodides than to mercury. It is unnecessary to say more about a condition that must be familiar to most surgeons, but which has been a fertile source of mistakes in diagnosis.

In testing the evidence as to a true second infection with the syphilitic virus we must be careful in our definitions and stringent as to the facts recorded. Dr. Andrewes has put the matter well:[4] "By a true second attack should be meant the occurrence, twice in a patient's life, of a primary sore followed by secondary symptoms, and if this definition be accepted, the phenomenon must be admitted to be of extreme rarity. As Neisser points out, it means not only that the patient has been completely cured of his first attack but that his tissues have so returned to the normal as to react to the syphilitic virus like those of an intact person, and, it may be added further, that he has lost any immunity which may have been conferred by his first attack." I doubt if Dr. Andrewes is quite correct in stating that "the phenomenon must be admitted to be of extreme rarity." At any rate it is worth while to bring forward such evidence on the question that exists, and it is of interest to note that private and not hospital practice furnishes nearly all the cases which are conclusive.

It is, moreover, only those who have to treat cases of syphilis from its outset who will obtain any evidence of true re-infection; indeed, most physicians seem to ignore its possibility. Thus Dr. F. W. Mott[5] made publicly this year the emphatic statement: "We know ..... also that one attack of syphilis confers immunity during the rest of the individual's life." How far this is from the truth will, I think, be conclusively shown by the following series of cases. The question turns on two considerations: first, the really efficient treatment of syphilis; and, secondly, after such treatment has been gone through, that the same individual should be exposed to contagion a second time. With these postulates granted there need be nothing unexpected or surprising in true second attacks of syphilis. The subject is especially worthy of study as helping us to define "really efficient mercurial treatment," as will be discussed later.

CASE 1. *Interval between the two infections seven years; second attack the more severe and protracted, especially the eruption on the skin and mucous membrane.*—The patient had been originally treated by me for stricture of the urethra. He was gouty and had eczema from time to time as well as herpes on the penis. After exposure to contagion on Nov. 10th, 1894, he came to me with two hard chancres of the penis, one at the preputial furrow, the other on the outside skin. The glands in the right groin were swollen and slight secondary eruption, &c., developed. He took hydrarg. cum creta fairly steadily for about three years, and with the exception of recurrence of a cutaneous syphilide in 1896 remained free from symptoms. In September, 1901—i.e., seven years after the first attack had commenced and four years after leaving off mercurial treatment—he was exposed to risk of contagion, and subsequently saw a medical man for a sore on the penis and a bubo. The treatment given was partly mercurial and partly iodide, but he did not improve and came to me on Nov. 25th, 1901. There was then an oval scar on the skin of the penis; the right inguinal glands were "shotty" and enlarged. There was a copious

[4] System of Syphilis, vol. i., p. 165.

[5] Morison Lecture delivered before the Royal College of Physicians of London.

eruption on the trunk, face, neck, and thighs consisting of large macules and papules. The cervical glands were perhaps slightly enlarged. In December both tonsils showed typical ulcers and filmy patches. In spite of mercurial treatment (chiefly hydrarg. cum creta, but sometimes mercury and iodide mixture) he had relapses of throat ulceration and mucous patches on the lips. He was an inveterate smoker. It was found to be much more difficult to administer specifics during this second attack, but with intervals mercury in some form or other was given for the greater part of three years. I believe that since 1904 he has remained well, but there is no question that the second attack of syphilis in this case was both more severe and more resistant than on the first occasion. It was, however, impossible to induce him to give up alcohol during the course of treatment.

CASE 2. *Interval less than three years; both attacks mild and amenable to treatment.*—A man was exposed to contagion about March 24th, 1900; he noticed a sore on April 15th. When I saw it on May 7th it was a typical indurated chancre on the inner surface of the prepuce, secreting very slightly, with double indolent inguinal bubo. The nature of the infection being thus beyond doubt, I put him on 4 to 6 grains of grey powder daily. He was very regular as to mercurial treatment but had bouts of indulgence in alcohol which somewhat interfered with its efficiency. Relapses of superficial glossitis along the edges of the tongue and the occurrence of a typical syphilitic ulcer of one tonsil proved that the secondary symptoms had not wholly been prevented by the early adoption of mercury. In addition he had follicular tonsillitis from time to time during the 18 months he was under supervision and treatment. On the whole the symptoms were slight and from the end of 1901 I believe he was quite free until Nov. 12th, 1902—i.e., two and a half years after the contraction of the first attack of syphilis, and one year after leaving off mercurial treatment. On this date he came to me again with a typical raised indurated chancre of the penis. This had followed a fresh contagion. There were an indurated lymphatic cord at the root of the penis and an indolent bubo in the left groin; a fine erythema arranged somewhat in ring form was present on the thighs. He took a mercurial course steadily for this second attack and developed no further symptoms.

CASE 3. *Interval 12 years; second attack the more severe.*—The patient was treated in 1887 by R. W. Taylor of New York for what was described as a mild attack of primary and secondary syphilis. The history as to the symptoms was quite conclusive. The treatment, with mercury and iodide, was kept up for two years. He remained free from reminders. In 1899, 12 years after the onset of the first attack and ten after leaving off treatment, he was exposed to risk and developed a chancre of the frænum, which lasted several weeks and was attended by a characteristic bubo. Subsequently he had pustular sores on the scalp and rather deep ulcers of the upper lip. I prescribed mercury and iodide, but as the patient left for America I was unable to follow up the case for long.

CASE 4.—*Interval only 18 months, the shortest on record; secondary symptoms in both attacks yielding well to treatment.*—A young man in September, 1892, came to the Lock Hospital with a large excavated chancre of the glans penis, with indurated indolent bubo, and subsequently ulcers on each tonsil. The induration at the site of the chancre lasted for five months. He was treated under Mr. Arthur H. Ward and myself for 17 months with mercury. In February, 1894, only 18 months after the first infection, he came to me with a fresh indurated circular sore on the penis, which was followed in due time by a copious eruption on the trunk, by an indolent bubo, and by general enlargement of the cervical glands. These symptoms yielded satisfactorily to mercury. I would draw special attention to this case, which was exceptional in the shortness of the interval (in fact, the treatment of the first attack was only just completed when the patient became re-infected). The symptoms in both were strikingly complete, and this is the only hospital case of the kind that I have notes of.

CASE 5. *Second attack at the end of nearly three years, secondary symptoms only slight; recurrent induration a year later.*—In February, 1902, a man consulted my father and one of the surgeons on the staff of Guy's Hospital for what was considered by both to be undoubted primary and secondary syphilis. He took mercury for 18 months until September, 1903. In December, 1904—i.e., nearly three years after the onset of the first attack—he was exposed to contagion and I saw him on Jan. 16th, 1905. He then had four circular sores on the penis and scrotum, one of which was slightly indurated. I could at first detect no enlarged glands and was disposed to doubt the chancres being infecting ones. However, typical condylomata followed and I then prescribed hyd. c. creta which he took steadily for a year. The condylomata soon disappeared and no further syphilitic symptoms ever developed. In 1906, after further contagion, he came with a slightly raised and indurated sore on the under surface of the prepuce; it cleared off under local treatment with calomel, &c., and I regarded it as an instance of the recurrent pseudo-indurated sore.

CASE 6.—*Two attacks at intervals of seven years, both very amenable to mercury.*—In this patient the *first attack* occurred at the age of 23 years—chancre followed by eruption and later by gummata. He took mercury, which, in his words, "acted like a charm." He had a *second attack* at the age of 30—i.e., seven years after the first. A chancre was followed by an eruption and sores on his throat and lips. He took mercury for a year and was apparently cured. Eleven years later, at the age of 41, I treated him for syphilitic orchitis of one testis which proved very obstinate.

CASE 7. *Eight years' interval between the two infections.*—A patient was treated at the age of 22 years by Sir T. B. Crosby for primary chancres followed by deep ulcers of the throat. He was under mercurial treatment for about two years and had no reminders later. When aged 30, eight years having elapsed, he came to me with a large cartilaginous chancre almost at the site of the first one—in the retro-preputial fold. There were bullet-like glands in both groins. I withheld mercury for a week or two and a fine papular secondary eruption duly appeared on his trunk completing the diagnosis. Under internal administration of mercury the case did excellently.

All the cases narrated above conform to the stipulation laid down at the outset: that the true syphilitic nature of the second infection should be proved by the development of secondary symptoms. Were one to include cases in which mercurial treatment has been adopted as soon as the surgeon was satisfied in his own mind that the second chancre was syphilitic, it would be easy to increase the list tenfold. The seven conclusive examples I have adduced suggest the following deductions.

1. Efficient treatment by a continuous course of mercury for one or two years is the surest way of rendering a patient susceptible to second infection. With this proviso he may contract syphilis again within two or three years of the onset of the first attack (Cases 2, 4, and 5). The treatment of the first attack in all the seven cases was by a steady mercurial course lasting from one to three years.

2. The interval between two attacks of syphilis may be so short a time as 18 months (Case 4)—i.e., the patient may no sooner have finished his course of treatment than fresh exposure may produce a complete fresh attack. The average interval has been in my experience six years.

3. The second attack may be slighter or more severe than the first; nothing positive can be laid down on this point. If the symptoms on the first occasion have readily yielded to mercury they will probably do so in the second.

4. There is no reason why the same patient should not go through even three attacks of syphilis provided the first two have been well treated. My father has recorded one definite example of this and another much more doubtful one.[6]

I wish especially to draw attention to the paper On Second Attacks of Syphilis which has been just quoted from. Unfortunately it was published in a work circulated only amongst private subscribers, and the remarkable collection of facts my father brought forward may have hence escaped notice. He has reported[7] no less than 56 cases under his own observation. But of these he only claims 32 as appearing beyond dispute. I have gone carefully through all the case-narratives and believe that 18 only out of the 56 would be admitted as true second attacks of syphilis under the qualification rightly laid down by Dr. Andrewes—i.e., the occurrence of primary and secondary symptoms on both occasions. These undoubted cases are Nos. 1, 3, 7, 8, 10, 12, 16, 17, 24, 26, 31, 32, 38, 46, and 47 in his list, with three

[6] Hutchinson's Archives of Surgery, vol. vi., pp. 113 and 114.
[7] Loc. cit., pp. 17, 107, 256.

others not tabulated. The conclusions just laid down would apply equally well to the total number—25 cases—as to the smaller one—seven in all—reported in this paper. It is of special interest to find that three or four of my father's cases support the contention that true re-infection may occur within two years of the first. This would hardly be credited without such positive evidence.

Much has been said and written of late by the advocates of mercurial injections and courses of inunction against the treatment of syphilis by long-continued administration of mercury by the mouth. Many continental surgeons speak of it only in terms of disparagement, and some of their English followers are quite as dogmatic—with quite as little cause. Major Lambkin[8] "has long since abandoned internal medication for syphilis." Sir Felix Semon stated his experience "that the treatment of syphilis by small doses of mercury given by the mouth was not protective against secondary and tertiary syphilis." Dr. Lieven of Aix-la-Chapelle went so far as to say "the introduction of hypodermic injections in England would mean a blessing to the thousands suffering from syphilis." This is hardly the place to enter into a discussion of such a large and controversial subject. It may, however, be pointed out that the system of mercurial injections for syphilis is no new thing in England, as Dr. Lieven apparently supposed, that it has been extensively tried here for 30 years or more, and that most of the advocates of prolonged internal treatment prefer the latter as being in their experience the most efficient and undoubtedly the least inconvenient method, the safest, and the most free from awkward complications.

Dr. Lieven, who praises the system of intramuscular injections in the curious terms just quoted, admits that "in our country, i.e., Germany, owing to the many disadvantages, if not dangers, associated with injections, the majority of the profession prefer treatment by inunction." It should be noted that his routine course of inunctions covers a full two years, and that many other continental authorities insist on intermittent periods of treatment for three, four, or even more years. If injections and inunctions are greatly superior to continuous administration by the mouth, why should it be necessary to carry them on for a considerably longer period than suffices with a thorough course of the latter method? This is a simple question to which I can at present see no answer. As a matter of personal experience, many of the worst and most obstinate cases of tertiary syphilis I have seen have been in patients treated early by intermittent courses of injections or by inunction at Aix-la-Chapelle or elsewhere.

The chief interest of second attacks of syphilis is perhaps in the light they throw on the efficiency of treatment. In practically every one of the 25 undoubted cases now brought forward *mercury had been continuously administered by the mouth for a long period*, usually from one to two years. In several of these cases only a short interval had elapsed before the patient again contracted the disease, and his symptoms were exactly the same as if the virus had attacked virgin soil. That such a series of cases from the practice of my father and myself can be adduced is at least a fair argument in favour of the continuous method of treatment.

It should be remembered that the late Professor Ricord with his great experience of syphilis stated categorically that he had never met with an instance of two attacks of syphilis in any of his patients. "La science ne possède pas encore un seul exemple probant de ré-infection syphilitique. Ce n'est pas que je nie la possibilité d'une répétition du chancre induré, au contraire j'y crois et j'y crois fermement, quoique l'expérience clinique m'en ait, jusqu'ici, refusé des preuves." May it not have been that Ricord's method of treatment, by interrupted courses of mercurial inunction, was responsible for this failure of evidence as to the possibility of re-infection?

If it be admitted that two attacks of syphilis may be acquired, and that such an occurrence is not very rare, we should expect to find abundant evidence of the subjects of inherited syphilis acquiring the disease in later life. The longer the interval the greater should be the chance of re-infection. The inherited syphilitic has been infected before birth; surely in 20 or 30 years all protection or immunity should have been lost. Personally I have had seven years' experience at the Lock Hospital (where there is an immense amount of acquired syphilis) and about ten years at Moorfields Hospital (which is perhaps the finest field for the study of the inherited disease in young adults), and over 20 at the London Hospital (where there is abundance of both acquired and inherited syphilis). I have been constantly on the look-out for cases in which the double infection could be clearly proved, yet doubt if I have seen more than three or four in all. The following case is conclusive; its subject was a man, aged 28 years, who attended the out-patient department of the London Hospital with a large chancre of the penile furrow, double inguinal bubo, and secondary eruption of annular and crescentic form which was especially marked on the scrotum. Thus his acquired syphilis was undoubted, nor was the evidence of inherited taint less marked. The bridge of his nose was much sunken; he had chronic ozæna, symmetrical deafness (from internal ear trouble), whilst both corneæ showed nebulæ from old interstitial keratitis. In my father's Archives of Surgery, Vol. V., p. 75, there is a solitary example of the same kind recorded, but in this case the evidence of inherited syphilis rested on the patient's history rather than on any objective signs.

No doubt the apparent rarity of such cases—acquired syphilis in the subjects of inherited taint—is to be explained by the fact that so few adults show conspicuous traces of the latter. At the same time it is probable that severe inherited syphilis with late symptoms (those occurring about puberty for instance) does confer a much longer immunity than an ordinary acquired attack for which the treatment has been prompt and effective. It is interesting to note that the spirochæta pallida can be demonstrated with greater ease and abundance in the late lesions of inherited than those of acquired syphilis.

To the two cases at present adduced I could add a few more from the literature of the subject.

The late Sir Alfred Cooper and Mr. Edward Cotterell published in 1895 a paper on syphilitic re-infection, consisting almost entirely of cases recorded by other observers in England, on the Continent, and in America. The only original case adduced in this paper was one under the care of Mr. Cotterell of "a woman, aged 20, who has well-marked syphilitic incisor teeth and evidence of old keratitis, yet she is going through an ordinary attack of constitutional syphilis, which began with a well-marked indurated chancre." Similar cases were described by Professor Boeck, Professor Lang, Dr. Dowse, E. Arning, and my father—but the details are very scanty and some of the evidence is doubtful. The same criticism must be made of many of the case-records collected by Sir Alfred Cooper and Mr. Cotterell of two attacks of acquired syphilis in the same individual. A large proportion wholly fail to carry conviction to the reader's mind, though some are conclusive.

Park-crescent, W.

[8] Lambkin: Proceedings of the Royal Society of Medicine, vol. ii., No. 4, p. 74.

A SIMPLE METHOD OF SERUM DIAGNOSIS OF SYPHILIS.

BY ALEXANDER FLEMING, M.B., B.S. LOND.

(From the Laboratory of the Inoculation Department, St. Mary's Hospital.)

ONE of the most useful serum reactions introduced in recent years is the "complement fixation" test for syphilis. The performance of the test has, however, been so laborious and complicated that it has not come into general use. I propose here to give the results I have obtained with a very simple modification of the reaction, but before doing so it would be well to restate some of the elementary principles governing hæmolysis on which the test depends.

Hæmolysis of red corpuscles by serum is brought about by two bodies, amboceptor and complement, acting in conjunction, and neither of these bodies is capable of causing hæmolysis in the absence of the other. The amboceptor is a stable substance and is specific—i.e., the amboceptor for the corpuscles of one animal has no action upon the corpuscles of an animal of a different species. The complement is not specific and is easily destroyed by heat or keeping. When highly organised substances, be they red corpuscles, micro-organisms, or similar bodies, are injected into an animal an immunising response is induced whereby

specific amboceptors are produced. In the same way in many infections specific amboceptors to the infecting organism are found in the serum of the patient.

Bordet and Gengou [1] found that if some of this patient's serum was heated to destroy the complement naturally present, and to it was added some of the infecting microbes and some guinea-pigs' serum (containing complement), then the organisms bound up to themselves in the presence of the specific amboceptor the complement of the guinea-pigs' serum. This binding was shown by the fact that when the mixture was added to a mixture of inactivated hæmolytic serum for sheep's corpuscles and sheep's corpuscles no hæmolysis occurred, although the amount of guinea-pigs' serum used when added to this mixture caused complete hæmolysis.

This Bordet-Gengou reaction was applied by Wassermann [2] to syphilis in 1906. Not being able to obtain a culture of spirochætæ he used a saline extract of the liver of a syphilitic fœtus as his "antigen," and found that in the presence of a syphilitic serum this was capable of binding complement. His technique was very elaborate and cumbersome, and he required for the carrying out of the test: (*a*) extract of syphilitic liver; (*b*) extract of normal liver; (*c*) serum to be tested; (*d*) serum from healthy and syphilitic persons; (*e*) guinea-pigs' serum (complement); (*f*) serum of a rabbit immunised to sheep's corpuscles; and (*g*) washed sheep's red corpuscles. The reaction itself was carried out in two stages. The syphilitic liver extract, inactivated patient's serum, and guinea-pigs' serum were mixed in suitable proportions and incubated, after which sheep's corpuscles and inactivated hæmolytic serum were added and the mixture again incubated. If, now, hæmolysis took place the reaction was negative—i.e., the patient had not got syphilis—while if hæmolysis was prevented it was assumed that the extract of syphilitic liver had in the presence of a syphilitic amboceptor bound the complement and so prevented its acting in combination with the hæmolytic amboceptor to produce dissolution of the sheep's corpuscles. As one had to use control tubes for every stage and every substance used in the reaction the method was exceedingly laborious, apart from the very uncertain character of the liver extract prepared in this way.

Wassermann maintained that the reaction was a specific one which would only appear when an extract of a syphilitic organ was used, and he employed healthy liver extracts to control his reaction. Soon, however, it was shown by Levaditi, and afterwards by many others, that it was quite unnecessary to use a syphilitic extract as the reaction could be obtained by extracts from normal livers and hearts, guinea-pigs' hearts, and many other tissues and organs. Then Landsteiner [3] showed that the substances on which the test depends were of the nature of lipoids and were soluble in alcohol, so that alcoholic extracts of the various organs were well adapted for use in the test. This led to the use of known lipoids in place of the tissue extract, and it was shown that lecithin and cholesterin as well as sodium glycocholate and taurocholate, sodium oleate, and other substances could all be used successfully. The fact that all these substances can be used to bind the complement in the presence of syphilitic serum, whereas when they are injected into animals no antibodies are produced, puts the reaction out of line with the Bordet-Gengou phenomenon, and in view of this I have, in describing the method I have used, omitted the word "antigen," substituting for it tissue extract.

Bauer [4] took advantage of the fact that there exists in normal human serum a hæmolytic amboceptor for sheep's corpuscles, and so did away with the use of the hæmolytic rabbits' serum, still, however, using guinea-pigs' serum as complement. Hecht [5] went a step further and used the natural hæmolytic amboceptor for sheep's corpuscles present in human serum, and used also as his complement that present in fresh human serum. Thus he made the serum to be tested supply the complement as well as the hæmolytic amboceptor. He, however, still used fairly large quantities of patients' serum in the test, thus rendering it unsuitable for universal application.

The method I shall describe, and which I have used throughout in my observations, is essentially that of Hecht, in so far as I make use of the complement and hæmolytic amboceptor of the serum to be tested. The technique is, however, quite different and is, I think, simpler and more suited to clinical requirements.[6] For the test the materials required are: (1) alcoholic extract of heart muscle; (2) serum to be tested; and (3) sheep's red corpuscles. We will now take these in detail.

1. *Alcoholic extract.*—One gramme of heart muscle is well ground up in a mortar with 5 cubic centimetres absolute alcohol. The whole is now transferred to a test tube and heated to 60° C. for one hour, following which it is allowed to sediment for 24 hours at 37° C. The clear supernatant fluid is poured off into another tube and stored in an ice chest, or if this is not available at room temperature. This alcoholic extract must be diluted with normal salt solution before use in such proportion that while it will completely bind the complement of a syphilitic serum it will not interfere with the hæmolytic power of normal serum. It must also be borne in mind that if too large a percentage of alcohol is used then hæmolysis will take place when sheep's corpuscles are added, even in the absence of serum. Thus no extract should be used which requires to be used in a strength exceeding 10 per cent. The strength of the extract is tested by taking various strengths, say 1, 2½, 5, and 10 per cent., and using each with a syphilitic and a non-syphilitic serum in the manner shortly to be described. That strength is chosen which will completely prevent hæmolysis with the syphilitic serum but which will have no effect on the normal serum. Once the proper dilution is found this can be used from day to day without further preliminary standardisation, as the controls which are used in the actual testing give sufficient indication as to the qualities of the extract. The all-important part of the whole reaction seems to be the use of a suitable extract.

2. *Serum.*—Blood is drawn off from the finger or ear into a blood capsule exactly as if one wished to do an opsonic index or an agglutination test. No special care need be taken as to its sterility.

3. *Sheep's corpuscles.*—Whipped sheep's blood can readily be obtained from a butcher. The corpuscles are washed free from serum by repeated dilution with normal saline and centrifugalisation, and for use a 10 per cent. suspension is made in normal saline. The corpuscles need not be absolutely fresh, as if they are stored in a cool chamber they will keep without hæmolysis for two or three days. I have used them up to seven days old with perfectly good results; although at that time they tend to hæmolyse, one can by washing two or three times in saline solution obtain a useful suspension.

The test itself may be carried out in two ways which, although essentially the same, differ in certain technical details. In the first method a series of small test-tubes are made from a glass tube by drawing it out in a blowpipe at intervals of one inch. These lengths are now sealed off at each end and divided in the middle so that two small tubes remain each about half an inch long and sealed at one end. These tubes are set upright in some adhesive material (plasticine is most excellent material for the purpose), in two rows, exactly like a company of soldiers, drawn up in two ranks, each rear rank tube covering one of the front rank. Each pair of tubes (one front and one rear rank) will now correspond with one sample of serum to be tested. A pipette must now be made to measure the volumes of the fluids to be used, and for this purpose a simple pipette such as is used for opsonic determinations is quite suitable. All the measuring can be done with one arbitrary mark, but if a large number of observations are being done it is better also to have marked on the capillary of the pipette a volume corresponding to four times the smaller volume. The exact volume is immaterial so long as the ratio 1 to 4 is maintained.

In arranging the volumes of extract, serum, and sheep's corpuscles several things had to be taken into account. The most important was to determine in what dilution normal human serum lost its power of hæmolysing sheep's corpuscles. This varies enormously—a few sera have practically no hæmolytic power, while in others it is very marked. In the

[1] Annales de l'Institut Pasteur, 1902.
[2] Deutsche Medicinische Wochenschrift, 1906.
[3] Wiener Klinische Wochenschrift, 1907.
[4] Deutsche Medicinische Wochenschrift, April 16th, 1908.
[5] Wiener Klinische Wochenschrift, 1908, p. 1742.

[6] More recently Noguchi (Journal of Experimental Medicine, March, 1909) has used human red corpuscles and hæmolytic serum derived from a rabbit immunised against human corpuscles. While this is convenient in so far as it is always easy to get human corpuscles, the use of an immunised rabbit renders it in this country impracticable outside the larger laboratories.

majority of cases, however, complete hæmolysis ceases in between a 12-fold and a 24-fold dilution of the serum. Thus we want to adjust our quantities to obtain as small a dilution of the serum as possible. Next we must use sufficient extract completely to bind the complement from syphilitic sera. Too much extract must not be used, otherwise the complement will be bound in all sera, normal as well as syphilitic. The constituent which is most precious as regards quantity is the patient's serum, so this has to be kept to as small a volume as is conveniently possible. From an ordinary blood capsule one can always obtain two volumes of 10 cubic millimetres each without the necessity of centrifuging the capsule. This volume, then (10 cubic millimetres), I have taken as my unit of measurement. The strength of the suspension of sheep's corpuscles must be such that a sufficient quantity may be added to give a sharp end point without adding an undue amount of fluid. I have found one volume of a 10 per cent. suspension very suitable. Lastly, the total volume must be sufficient to allow one to easily distinguish when hæmolysis has taken place. From 40 to 60 cubic millimetres is a suitable quantity.

Taking as one volume about 10 cubic millimetres, one adds to each of the small test-tubes in the front rank 4 volumes of salt solution, and to each of the rear rank 4 volumes of extract. To the first pair of tubes (one front and one rear) is added 1 volume of a non-syphilitic serum. To the next pair 1 volume of serum of a known syphilitic is added, and to the remaining pairs the serum of the patients to be tested. Lastly, in one tube is put 4 volumes of extract without serum. The contents of these tubes are mixed and incubated at 37° C. for one hour, after which 1 volume of sheep's corpuscles (10 per cent. suspension) is added to each tube, and the whole is incubated again for from one and a half to two hours. The results may then be read off, but sharper differentiation is obtained if the tubes are put in the ice-chest for several hours to allow for sedimentation of corpuscles in the non-hæmolysed tubes.

The results will be as follows. Syphilitic serum: hæmolysis in the tube containing salt solution, serum, and corpuscles; no hæmolysis in the tube containing extract, serum, and corpuscles. Non-syphilitic serum: hæmolysis in both tubes. No hæmolysis should be observed in the tube containing only extract and corpuscles.

In the second method of carrying out the test the only apparatus required is a stock of opsonic pipettes and a rubber teat. A mark is made on the stem of the pipette about half an inch from the end, and 4 volumes of extract are taken up followed by one volume of serum. These are mixed on a glass slide and the mixture is drawn up into the pipette. One volume of 10 per cent. washed sheep's corpuscles is now taken up into the pipette separated from the serum extract mixture by a small air-bubble. The end of the capillary is now sealed and the pipette is incubated for one hour, after which the end is broken off and the corpuscles are mixed with the serum and extract on a slide, the mixture being taken up again into the pipette and the end sealed. The pipette should now be set vertically in the incubator for another one and a half to two hours, after which the reaction is read as before. Control pipettes with salt solution instead of extract and with known healthy and syphilitic serum should be put up as in the first method.

With some extracts one can use 1 volume of each of the constituents, which increases to some extent the rapidity with which the test is carried out, and at the same time, allowing the serum to act on the corpuscles in only a three-fold dilution, it hastens the hæmolysis and increases the sharpness of the reaction in those sera which do not hæmolyse sheep's corpuscles well in higher dilutions.

While these methods of procedure are sufficient in most cases modifications have sometimes to be introduced. The test depends on the natural hæmolytic power of human serum for sheep's corpuscles, but this power is very deficient or totally absent in about 10 per cent. of human sera. This may be due to the absence in the serum of either complement or amboceptor, and the test is completed by supplying the deficiency. The test is done in the usual way, and one finds that the hæmolytic power in one pair of tubes is deficient. Then one adds 1 volume of inactivated normal human serum (heated to 58° for 30 minutes), which is known to have an amboceptor for sheep's corpuscles, to this pair of tubes and incubates for another two hours, when, if the serum possesses any complement, hæmolysis will take place in the "salt" tube and the "extract" tube will be hæmolysed or not as the serum is syphilitic or non-syphilitic. If the serum be deficient in complement then one must add this either in the form of guinea-pigs' serum containing complement only or fresh human serum containing both complement and amboceptor before the first incubation period. Thus one puts in one tube 4 volumes of extract, 1 volume of patient's serum, and 1 volume of fresh normal serum, while in the control tube the extract is replaced by normal saline solution. This is incubated for one hour, the corpuscles are added, and the test is completed as above.

By adopting one or other of these simple methods, a positive or negative result may be obtained in practically every case.

The method I have described above has these great advantages which put it within the reach of any practioner: 1. It requires only a very small amount of the patient's blood, such as may be drawn into an ordinary blood capsule as for an opsonic index or a Widal's test, and thus obviates the necessity of drawing off blood from a vein with a syringe, while at the same time making it easy for a blood sample to be sent to a laboratory for the test to be done. 2. It does away with the use of an animal immunised to sheep's corpuscles as in Wassermann's test, or to human corpuscles as in Noguchi's modification. This process of immunising an animal is a tedious one, and as it comes under the heading of vivisection it is in this country of very limited application. Thus the only thing one requires to get frequently is the sheep's blood, which can readily be obtained anywhere twice a week or oftener from a butcher.

It might be argued against the method that as one employs the complement contained in the patient's serum, and as complement is destroyed by keeping, that it would be necessary to do the test very soon after the patient's blood was drawn. I have, however, repeatedly performed the test, using serum which had been kept a week both in the ice-chest and at room temperature, and find that the value of the test is in no way diminished even after this interval, the duration of which would be greater than any delay which might be necessary in practice.

The results obtained by this simplified technique seem to be quite as good as those obtained by the more complicated procedure of Wassermann. I will give briefly the results in syphilitic and apparently non-syphilitic cases. These results may be tabulated as follows:—

	Positive.	Negative.	Doubtful.*
Syphilis with active lesions:			
(1) Primary	2	1	0
(2) Secondary	17	0	0
(3) Tertiary	67	1	4
(4) Congenital	9	0	0
Syphilitic history, but without any active lesions. (Most of these cases are at present under treatment which has lasted for various periods.)	21	4	3
Supposed non-syphilitics	10	267	8

* Many of the doubtful results were due to the deficient hæmolytic power of the serum tested, and when a second examination was made, taking the precautions mentioned earlier, definite positive or negative results could usually be obtained.

Thus it will be seen that of the patients presenting syphilitic lesions only 2 per cent. gave a negative reaction, while of those who had a definite syphilitic history, but who at the time of examination had no lesion, 75 per cent. were positive.

The patients presented all stages of the disease, including 11 cases of general paralysis, 9 of whom gave sharply positive reactions, while in 2 cases the hæmolytic power of the serum was almost but not quite abolished. The cases classed as non-syphilitic were either healthy men or patients attending for other disease. They may be classified as follows:—

	Positive.	Negative.	Doubtful.
Healthy	—	70	2
Chronic tuberculosis	3	128	2
Chronic staphylococcic infections	1	21	—
Streptococcal infections	—	6	—
Gonococcal "	2	3	—
Leprosy	2	—	—
Pneumonia	—	4	—
Other diseases, including glanders, diabetes, rheumatism, psoriasis, scarlet fever, &c.	2	39	—

Except syphilis, the only disease in which a positive result

was at all constant was leprosy, the two cases tested both giving positive results. This is in accord with the results obtained by other observers.[7] In the other diseases and in the supposedly normal people only one or two gave the reaction, and none of these were free from suspicion of syphilis. Several individuals who were tested as normal, but who gave positive reactions, subsequently admitted the infection, so they have been transferred to the definitely syphilitic column. The somewhat large proportion of positive results in gonorrhœal cases is due in all probability to a double infection.

I now propose to deal with the exceptions seriatim.

I. Syphilitics with lesions giving negative reactions: 1. Hard chancre with enlarged glands in groin. No secondary lesions. 2. Eye lesion under treatment with mercury. The name of this patient was lost, so the case could not be traced.

II. Syphilitics without lesions giving negative results: 1. Man, aged 70 years; said to have had syphilis 40 years ago. 2. Woman, aged 25 years; stated that she suffered from congenital syphilis. Had had no lesion for at least 10 years. No absolute signs of syphilis. 3. Man; had primary lesion in November, 1907; treated since with mercury. Probably cured. 4. Man; had syphilis 15 years ago. Treated. No signs of disease since.

III. Supposedly non-syphilitics giving positive reaction: 1. Leprosy. Had been a sailor many years. No definite history of syphilis. 2. Gonorrhœal arthritis. Had been a sailor for 20 years. 3. Furunculosis. Patient did not return, so there was no opportunity of obtaining history. 4. Leukæmia. Man, aged 60 years. Patient denied syphilis. 5. Gonorrhœal arthritis. 6. Tuberculous glands and ulceration of thigh. Child, aged 12 years. The ulcer was supposed to be tuberculous, but had resisted tuberculin treatment. 7. Tuberculous glands. Woman, aged 40 years. Alcoholic tendencies. No definite history of syphilis. 8. Tuberculous cystitis. Denies syphilis but admits gonorrhœa four times. 9. Leper. No suspicion of syphilis. 10. Cystitis (*Bacillus coli*). Married woman. No history of syphilis.

I do not think that in any one of these cases giving a positive reaction are we justified in saying that syphilitic infection is absent with the possible exception of one man suffering from leprosy.

It has been stated that scarlet fever cases frequently give positive reaction. My list includes 13 of these, all of whom were negative. Other diseases, such as diabetes or tuberculosis, have also been stated to give positive reactions; none of these statements have I been able to corroborate. Probably they depend on the use of an unsuitable tissue extract, for several observers have found that in scarlet fever with certain extracts positive results were obtained in some cases, but with most of the extracts all gave negative reactions.

The work of continental investigators would seem to show that when as the result of treatment a cure is effected, then the reaction becomes much less marked or disappears altogether, and some of my results, where doubtful or negative reactions were obtained after treatment, appear to confirm this. Thus, instead therefore of condemning a man to two or three years of treatment without knowing whether or not at the end of this time the infection has been got rid of, it might be possible from examination of the blood at intervals to shorten the duration of treatment in some cases very much, while in others in whom the reaction did not disappear treatment might be continued over a longer period, in this way possibly avoiding the recrudescences of the disease commonly met with. In connexion with the marriage of a syphilitic person the reaction may also prove of some assistance.

Conclusions.—1. The method described is a clinical method, requiring only the preparation of a suitable tissue extract and an elementary knowledge of laboratory method. 2. The reaction is positive in almost all cases of syphilis in the secondary and tertiary periods and in congenital syphilis. 3. In primary syphilis the reaction may fail to appear. 4. In cases after treatment the reaction may be negative, probably indicating the disappearance of the infection. 5. The only disease I have met with giving positive results, apart from syphilis, is leprosy.

St. Mary's Hospital.

[7] Bauer and Meier: Wiener Klinische Wochenschrift, 1908, p. 1765. Leprosy, however, is so uncommon and so easily distinguished from syphilis usually, that this does not interfere with the value of the test. The same applies to the diseases caused by trypanosomes, which undoubtedly give positive reaction.

THE SERO-DIAGNOSIS OF SYPHILIS.*

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IT is only a little over two years since Wassermann, Neisser, and Bruck (45) suggested the application of the Bordet-Gengou fixation of the alexine reaction (4) as a sero-diagnostic test for syphilis, and already a considerable literature has accumulated on this subject. Most of it confirms the original observations of Wassermann and his collaborators with regard to the value of this reaction; it is true that in certain diseases other than syphilis positive reactions have been reported, but before these can be accepted it is necessary that every possible technical error be definitely excluded. The basis of this test depends on the fact that an absorption of the alexine (complement) takes place when an antibody and its antigen are brought together (3). In their initial experiments Bordet and Gengou demonstrated by this method specific antibodies for the vibrio choleræ, the bacillus typhosus, and the bacillus anthracis in their respective immune sera; as antigens they used emulsions of the bacteria. A short time after this Gengou showed that the same phenomenon occurred in the case of anti-albumin sera in the presence of their antigens (18). Neisser and Sachs (36) adopting this idea showed that in the fixation of the alexine reaction we had an extremely delicate, if not the most delicate, medico-legal test for human blood. Instead of using bacterial emulsions as antigens in this reaction extracts of the bacteria are now used. This is of considerable advantage as it gets rid of one of the disturbing factors formerly present in the reaction, one which arose from the fact that bacterial emulsions have a considerable power of absorbing complement (11), and besides, it allows of extracts of the tissues, which contain the micro-organisms, being used as antigens in those cases where we cannot obtain cultures of the micro-organism as syphilis and leprosy.

Specific antibodies have been demonstrated by this reaction in several human infections, such as typhoid (49), diphtheria (23), tuberculosis (8) (46), gonorrhœa (31), dysentery (12), cerebro-spinal meningitis (10), and leprosy (14), although in certain of these infections antibodies had not been demonstrated previous to the employment of this reaction. In 1906 Wassermann, Neisser, and Bruck, using the Bordet fixation of the alexine reaction, demonstrated in the sera of monkeys which had previously been inoculated with syphilis the presence of a new substance which they said was a specific syphilitic antibody. They used as antigen, extracts of pounded syphilitic tissues, such as congenital syphilitic liver and chancres. The reaction was then extended to the sera of syphilitic patients and positive results were obtained which, in Wassermann's opinion, were due to the presence of syphilitic antibodies in the sera of these individuals. The cerebro-spinal fluid of patients suffering from such para-syphilitic affections as general paralysis of the insane and locomotor ataxia was then examined, and positive results were obtained in as high a figure as 80 per cent. by Wassermann and Plaut (47), Marie and Levaditi (27), this adding fresh proof to the supposed relation of these affections to syphilis.

Nature of the reaction.—Wassermann, Neisser, and Bruck when they demonstrated this reaction considered that it was due, as stated above, to the presence of a specific syphilitic antibody in the sera of the individuals affected, the reaction depending on the absorption of the complement by a specific amboceptor in the presence of its antigen. Others, again, including Moreschi (29), believe that the fixation of the alexine reaction depends on the occurrence of a specific precipitation which takes place when the immune body is brought into contact with its antigen, a visible precipitation, as has been shown by Muir and Martin (30), not being necessary. Levaditi and Yamanouchi (24) believe that the Wassermann reaction is not due to the presence of a true syphilitic antibody in the serum, but to the presence of some other substances which are the result of a pathological cellular metabolism of the tissues, and are probably of the nature of lipoids. Levaditi and Marie (25) showed that the

* The figures in parentheses refer to the bibliography at the end of the article.

extract made from the liver of a normal infant could be used instead of congenital syphilitic liver as antigen, and that the so-called syphilitic antibody had no destructive effects on the virus of syphilis. It was then shown that the extracts of various other tissues could be used as antigen, such as human heart extract (Michaelis) (28), guinea-pig heart extract (Landsteiner) (22), &c., and that the active substances were soluble in alcohol and ether. These active substances, in the case of the liver, are believed to be lipoids, especially lecithin in association with bile salts; while the presence of these substances in the other tissues will account for their acting as antigen. Purified emulsions of these substances, such as lecithin (Levaditi (24)), cholesterin (Fleischmann (16)), sodium oleate (Sachs and Altmann (39)), and a mixture of sod. oleate, lecithin, and oleic acid (Sachs and Rondoni (40)) have been used with a considerable amount of success. Most workers, however, are agreed that the extracts of normal human heart and guinea-pig heart do not give results so consistent as certain extracts of congenital syphilitic livers, and I have found the same in my experiments. Levaditi and Yamanouchi, then, consider that the Wassermann reaction is dependent on the summation of the anti-complement effects of the patient's serum and the liver extract, and not on the interaction of an amboceptor with its antigen according to the Ehrlich school of reasoning.

Of course, there are many objections to this assumption. Weil and Braun (48), for example, have shown that an extract made from a congenital syphilitic liver, from which all the lipoids have previously been extracted, can still be used as antigen, so that the lipoids do not alone act as antigen; and again, it has not yet been definitely shown that there is any constant excess of lipoids in the sera of syphilitic patients; while in certain pathological conditions, where several of these lipoids are present in the sera in excess, no positive reaction is obtained. The sera of three patients who showed symptoms of marked jaundice were examined and all reacted negatively. This means that if the lipoids are alone responsible for the Wassermann reaction in syphilis, they must be present in an enormous excess, and it seems very unlikely that such a pathological cellular activity should be only found in one infection—namely, syphilis.

Bordet's adsorption theory is now receiving a considerable amount of attention on account of the fact that to many it seems a very rational one. According to his view, the active substance in the syphilitic serum brings about some physico-chemical change in the colloidal particles of the antigen, probably through a surface-tension alteration or other physico-chemical phenomenon, and the altered antigen acquires a greater adsorptive power for alexine, and if this be the correct explanation of the Wassermann reaction it is quite easy to see how it is possible for different substances to act as antigen, as all that is required is a sufficient degree of affinity between the two to produce by some physical change a new substance or complex which can adsorb the complement. Elias, Neubauer, Porges, and Salmon (13), Sachs, and Noguchi, are inclined to favour a physico-chemical explanation of the reaction. They consider that the reaction follows as the result of an interaction between the albumins of the serum and the lipoids in the antigen, probably as the result of a precipitation of some of the amphoteric colloids in the serum, when they are brought into contact with either an acid or basic colloid.

On the assumption that the Wassermann reaction is the result of some precipitation, Fornet (17), Porges and Meier (38), Klausner (21), Sachs and Altmann (40), Noguchi (34), and others have proposed to replace the fixation of the complement reaction in syphilis by a precipitation reaction. The suspected serum, after the necessary dilution, is mixed with either of the following substances, according to whose method is chosen, serum of a patient suffering from general paralysis of the insane, lecithin, distilled water, alcoholic solution of oleine, or butyric acid. These methods, however, have been found by most observers to be less accurate than that of Wassermann. Quite recently Schürmann (41) devised a very simple colour reaction as a sero-diagnostic test for syphilis, depending on a supposed increase of lactic acid in the blood, but on repeating his observations I found this reaction to be much less accurate than the Wassermann test. Whatever explanation of the Wassermann reaction one is inclined to favour one must admit that at present the true nature of the active substance or substances is unknown.

Technique.—The method employed in this research differs only in a few details from Wassermann's original method. The antigen used was obtained from the livers of congenital syphilitic infants, the livers being minced up and then dried in a vacuum over sulphuric acid; of this dried liver one gramme was taken, pounded in an agate mortar, and then extracted with 30 cubic centimetres of normal saline for about 20 hours in a cool place. The extract is centrifuged before use. An alcoholic (90 per cent.) extract of the fresh minced liver (1 in 10) was found to act equally as well as the saline extract. The quantity of liver extract required as antigen varied in the different extracts, but as a rule it lay between 0·1 cubic centimetre and 0·3 cubic centimetre. The exact amount for each extract is found by experimentation with a known case of syphilis. The dried antigen has the advantage that it can be kept several months without losing any of its properties, and it is doubtful if the alcoholic extract can be kept for this period, as according to Bauer and Meier (2) an alcoholic extract loses its specificity and fails to react only with syphilitic sera if kept for any considerable period. Fresh guinea-pig serum was used as complement in a 50 per cent. dilution with normal saline, and of this 0·1 cubic centimetre was taken. This serum must be used while fresh, as if kept more than 12 hours it loses the greater part of its complementing power.

The blood on which the observation was to be made was collected from the patient's thumb into a glass capsule; by this method one has usually no difficulty in getting the two cubic centimetres required for the reaction. The blood is allowed to coagulate in the capsule, which is then centrifuged, and the serum is drawn up into a standardised pipette. The serum is then inactivated by heating at 56° C. for half an hour. I found that a patient's serum after being treated in this manner could be kept several weeks without apparently losing any of its fixation properties. According to Noguchi, however, the serum may be kept several months with but little deterioration. Most of the observations were made by using in the hæmolytic system sheep's red corpuscles and the homologous antiserum obtained from a rabbit which has received two or three injections of washed sheep's corpuscles. One cubic centimetre of a 5 per cent. dilution of defibrinated washed sheep's corpuscles was used along with two and a half times the minimum amount of inactivated immune serum required to completely hæmolyse this quantity of blood in the presence of 0·1 of complement (50 per cent.). Objection has been made to the use of sheep corpuscles in the hæmolytic system owing to the fact that human serum contains a varying amount of natural amboceptor for sheep's corpuscles, and this, along with the prepared amboceptor, would cause hæmolysis to occur where we ought not to find it; with excess of amboceptor, a much smaller amount of complement is needed to procure complete hæmolysis, so we might get a negative reaction where it really should be positive. The reaction is carried out in a series of small test-tubes (5 cubic centimetres capacity), and the reagents are placed in the test-tubes in the following order and amounts: (1) normal saline, 1·5 cubic centimetres; (2) extract of syphilitic liver, 0·2 cubic centimetre: (3) complement (i.e., normal guinea-pig serum), 0·1 cubic centimetre (50 per cent.); and (4) serum to be examined, 0·2 cubic centimetre. After being well shaken, the tubes, along with the necessary controls, are placed in an incubator at 37° C. for one and a half hours; the tubes are then withdrawn, the hæmolytic system added, and the tubes are shaken and replaced in the incubator for half an hour, or till the control serum tube shows complete hæmolysis, when the

No.	Saline solution.	Extract of syphilitic liver.	Complement (50 %)	Patient's serum.	Hæmolytic system, amboceptor, 0·1 c.c. in 1 c.c. 5 % sheep corpuscle suspension.	Result. Syphilitic serum.	Result. Control normal serum.
1	1·5	0·2	0·1	0·2	1 c.c.	No hæmolysis.	Hæmolysis.
2	1·7	—	0·1	0·2	1 ,,	Hæmolysis.	,,
3	1·7	0·2	0·1	—	1 ,,	,,	,,
4	1·9	—	0·1	—	1 ,,	,,	,,
5	2·0	—	—	—	1 ,,	No hæmolysis.	No hæmolysis.
	1½ hours at 37° C.				½ hour, 37° C.		

results should be read. The tubes should then be placed in an ice chamber over night, and the results again read to see if they correspond with the previous reading. The preceding table may help to explain better how the test, with its various controls, is actually carried out.

If several sera are being examined at once, one does not need to repeat all these controls with each serum; the important controls are those which are apart from the mere controlling of the technique—namely, the normal serum control and the control to show that the serum alone has no anti-complement effect. Very occasionally one meets with a serum which alone has a considerable anti-complement power. This is most frequently noticed with syphilitic serum, but it was also noticed in one or two instances with normal sera. When this happens one must take less than 0·2 cubic centimetre of serum for the reaction.

In certain syphilitic sera a much smaller amount than 0·2 cubic centimetre will give a complete inhibition of hæmolysis; in several cases as small an amount as 0·025 cubic centimetre gave a complete reaction. The hæmolysis is very often only partial and in such instances it is more difficult to give an opihion as to the exact degree of reaction. In these cases I found it better to compare the amount of hæmolysis present with the hæmolysis in the control serum tube by estimating the percentage of hæmoglobin in each, with the aid of von Fleishl's hæmoglobinometer. Others again prefer to use different amounts of serum in order to get a quantitative estimation of the amount of reaction. Both these methods, however, give practically identical results. In the tables the + marks are proportional to the degree of inhibition of hæmolysis.

Many modifications of Wassermann's reaction have been suggested, chiefly for the purpose of simplifying the technique, but most of these have little to recommend them, and at present it does not seem likely that any modification which could be done outside a well-equipped laboratory could have any practical value. Tschernogoubow (44) and Stern (43) advise the use of fresh human serum as complement instead of guinea-pig serum, while Bauer (1) makes use of the amboceptor for sheep corpuscles normally present in human serum, the latter method, according to the author himself and to Meirowsky (33), giving very accurate results. The objection to this method is that the natural amboceptor varies considerably, and in a few cases is practically absent, so that the serum of such an individual could not be tested by this method. Hecht (19) simply dilutes the blood to be examined with the various reagents and normal saline and places the mixture in an incubator for one hour at 37° C., then adds the 5 per cent. dilution of sheep corpuscles, thus making use of the complement and natural normal amboceptor present in human serum. Noguchi (35) makes use of an anti-human hæmolytic system; he also has the reagents put up in dried form so that the test may be carried out in the clinical laboratory. Most of the other modifications are concerned with the use of different substances as antigen and have already been mentioned.

The interpretation of the results obtained by the Wassermann reaction is frequently a little puzzling, and one must bear this in mind while criticising the report on a case. No doubt many of the discrepancies arise from the complex and difficult technique employed in the reaction, and from the fact that the reagents used are unstable bodies and soon undergo deterioration. Accordingly, as in several other biological tests, a negative result in this reaction cannot be taken as absolutely final, or, in other words, it does not prove that no syphilis is, or ever was, present, but we may assume that it is strong evidence that the patient is not syphilitic, or, if he has had syphilis, that he is not at present suffering from any manifestation of the disease. On the other hand, all observers are agreed that a positive reaction is very strong evidence that the patient is suffering from syphilis is some form or another. It is true that positive reactions have occasionally been noted with the sera of individuals affected with yaws (5) (6), leprosy (42), and scarlet fever (32), but whether the latter constantly give the reaction or not has yet to be determined, and even if they did give the reaction fairly constantly it would not interfere with the practical application of the test to any great extent, as the first two infections are rare in civilised countries, and apparently the latter gives a reaction only in the acute stage. More recently it has been denied that scarlet fever gives a positive Wassermann reaction in any large percentage of cases (20). From the list of cases examined, however, it will be seen that practically every case of florid syphilis gives a positive reaction. The data on which the observations were made were obtained from the examination of the sera of 149 cases of syphilis.

Primary syphilis.—In the case of primary syphilis it must be said that as a general rule the reaction is less marked and less certain than is the case with secondary syphilis. This is just what one would expect, as at the commencement of this infection there is much less reaction of the tissues than at a later period. In several cases where the chancres had only been present for some eight or ten days negative results were obtained, while the great majority of other primary cases reacted positively. In all, some 27 cases of primary syphilis were examined, and of these 20 reacted positively, or 74·2 per cent. If those cases are divided into two groups, the first composed of those cases in which the chancre has been present for ten days or less, and the second in which the chancre has been present for more than ten days, the percentage of positive results in the first group is 50 per cent., and in the second 80·9 per cent. It would therefore seem that the reaction is not as a rule strongly marked till well on in the second week after the chancre has appeared.

Secondary syphilis.—In secondary syphilis most of the cases of manifest syphilis gave a positive Wassermann reaction—the more definite the symptoms were, the more intense was the reaction—and this is just what one would expect if this reaction is to be pathognomonic of syphilis. In the early secondary period the reaction is more marked than at a later period when the symptoms are less acute, though in many instances there does not appear to be any relation between the intensity of the reaction and the severity of the lesions. A case with hardly any symptoms of the disease externally often gives quite as marked a reaction as a very severe case of syphilis. The difference in intensity of the reaction must, of course, be influenced to some degree by treatment. The sera of 92 cases of secondary syphilis, the great majority of which were diagnosed clinically as such, were examined, and of these 78 reacted positively, giving a percentage of 84 per cent. Of these cases 39 were cases of early secondary syphilis, and of these 39, 36 gave positive reactions, or 92·3 per cent.

Tertiary syphilis.—Some 17 cases of tertiary, or supposed tertiary, syphilis were examined; of these, ten reacted positively, or 58·9 per cent. This rather low percentage is to be accounted for, no doubt, by the fact that in many of the cases a previous syphilitic history was very vague, and, besides, one would scarcely expect to get such good results in this stage of syphilis, which is undoubtedly less active.

Parasyphilitic affections.—The sera of seven cases of general paralysis of the insane were examined, and all reacted positively. According to Marie and Levaditi (27) the reaction is not so marked with the serum as with the cerebrospinal fluid, but the circumstance that all those cases gave a marked reaction can no doubt be explained by the fact that the cases examined were in the paralytic stage of the disease. The serum alone of two of these patients had a stronger anti-complement power than is usually observed in syphilitic serum. The sera of two cases of locomotor ataxia also gave a positive reaction; while of four cases of congenital syphilis examined two gave positive reactions, one a doubtful and the other a negative.

The control sera were obtained from 19 healthy persons and from 26 persons suffering from diseases other than syphilis, and from whom no syphilitic history could be elicited. In one alone of these was a positive reaction obtained. The following is a list of the diseases from which the 26 patients suffered: tubercular arthritis, 1; exfoliative dermatitis, 2; acute gonorrhœa, 2; soft sore, 4; erythema induratum, 3; elephantiasis of arm, 1; chicken-pox, 1; tuberculosis of lungs, 2; pernicious anæmia, 2; lupus, 3; pemphigus, 1; and jaundice, 3. In all these control cases 0·2 cubic centimetre was the usual amount of serum used for the reaction. Only once in a normal individual did this amount of serum cause any delay in hæmolysis, while a case of chicken-pox gave a positive reaction, which, however, was not marked. Unfortunately, I was not in a position to test any of the other exanthemata, and on these infections many observations will yet have to be made before the vexed question as to how they react with the Wassermann test can be considered as settled.

Table Showing the First 100 Consecutive Cases of Clinical Syphilis Examined.

Observation.	Stage.	Duration of infection.	History of case.	Treatment.	Result.	Degree of reaction.
1	P.	30 days.	Indurated sore on penis; glands in groin shotty.	None.	P.	+ + + +
2	P.	28 days.	Indurated sore; groin glands shotty.	None.	P.	+ + + +
3	S.	6 months.	General roseolar rash, ulcerated throat; has had 14 intramuscular injections of mercury.	Regular.	P.	+ + +
5	S.	18 months.	Cicatrised scar on penis; sore-throat and condylomata; treated for three months.	Yes.	P.	+ + + +
6	S.	1 month.	General glandular enlargement and rash.	None.	P.	+ + + +
7	P.	1 month.	Developed general rash two months later.	None.	N.	0
9	S.	—	Treated for one month.	Yes.	P.	+ + + +
10	P.	—	Late primary; had one injection of mercury.	Yes.	P.	+ + + +
11	Cong. S.	—	Congenital syphilis, choroido-retinitis.	—	Doubtful.	+
12	P.	—	Hard sore on penis.	None.	P.	+ +
13	S.	16 months.	Has been treated for one year by intramuscular injections of mercury.	Regular.	P.	+ + + +
14	P.	6 days.	Hard sore on glans.	None.	P.	+ +
15	P.	1 month.	Hard sore; groin glands shotty.	None.	P.	+ + +
16	S.	—	Well-marked secondary symptoms, two injections of mercury.	Slight	P.	+ + + +
19	S.	15 months.	Sore-throat; supra-cubital glands shotty; pains in back treated for four months.	Yes.	P.	+ + +
26	S.	4 months.	Had a definite roseolar rash, which has now gone; had six intramuscular injections of mercury.	Yes.	P.	+ + + +
27	P.	10 days.	Sore on penis; doubtful case.	None.	N.	0
28	S.	16 months.	Continuous treatment for 14 months.	Yes.	N.	0
29	S.	—	Discharged as cured; had 100 grains of soamin.	Yes.	N.	0
31	S.	11 months.	Papular eruption on head; ulcerated palate; had iodide of potassium, but no mercury.	Yes.	P.	+ + + +
32	S.	1 month.	Chancre on penis; rash appeared for the first time the day serum collected.	None.	P.	+ + +
33	T.	7 years.	Continuously treated for 22 months; no symptom for four years.	Yes.	N.	0
34	S.	—	Chancre healed; well-marked rash; five injections of mercury.	Yes.	P.	+ + + +
35	S.	4 years.	No symptom for three years; well treated.	Yes.	N.	0
37	Cong. S.	—	Congenital syphilis; Hutchinson's teeth.	—	Doubtful.	+
39	S.	4 months.	General glandular enlargement; well-marked rash; six injections of mercury.	Yes.	P.	+ + + +
41	S.	4 months.	Had a hard sore and a rash appeared about three months later; has now ulcerated throat.	None.	N.	0
43	S.	2½ months.	Groin glands shotty; rash has now faded; treated for one month.	Yes.	P.	+ + + +
44	P.	1 month.	Small hard sore on penis; no rash; doubtful if syphilis.	None	P.	+ + + +
45	S.	2½ months.	Glands shotty; rash.	None.	P.	+ + + +
46	P.	7 days.	Hard sore on penis.	None.	N.	0
47	P.	10 days.	Hard sore on penis; groin glands shotty.	None.	P.	+ + +
50	S.	6 months.	Definite history of primary lesion; has been treated continuously for five months.	Yes.	N.	0
52	T.	5 years.	Chronic dermatitis of foot, but no active symptoms for over two years; treated for three years.	Yes.	N.	0
53	T.	18 years.	Ulcer on inner side of left ankle.	Slight.	P.	+ + + +
54	P.	10 days.	Hard sore on penis; groin glands shotty.	None.	N.	0
55	P.	2 months.	Hard chancre on glans; general enlargement of glands.	None.	P.	+ + + +
56	S.	5 years.	Pompholyx eruption on hands.	Regular.	P.	+ + + +
57	S.	2 years.	Sore-throat, ulcerated palate, &c.	Irregular.	P.	+ + + +
59	S.	5 months.	Rash and condylomata.	None.	P.	+ + + +
60	P.	8 days.	Hard sore.	Local.	P.	+ +
61	P.	9 days.	Hard sore.	None.	P.	+ + + +
62	S.	3 months.	Sore rash and sore throat.	Yes.	P.	+ + + +
63	P.	2 months.	General glandular enlargement.	Yes.	P.	+ + + +
64	S.	—	Well-marked secondary symptoms.	Yes.	P.	+ +
65	S.	—	,, ,,	Yes.	P.	+ + +
66	S.	—	,, ,,	Yes.	P.	+ + + +
70	S.	1 year.	Had definite secondaries, but has had no symptom for over two months.	Regular.	P.	+ + +
71	S.	2½ months.	General rash.	Slight.	P.	+ + +
72	S.	3 months.	Well-marked rash.	None.	P.	+ + + +
74	P.	1 month.	Hard sore on penis.	None.	P.	+ +
75	P.	3 weeks.	Sore on penis.	Local.	P.	+ + + +
76	P.	1 month.	Hard sore with enlarged groin glands.	Local.	P.	+ + + +
77	P.	5 weeks.	Indurated sore on glans, groin glands enlarged.	Local.	P.	+ + + +
78	P.	3 months.	Sore on penis.	Local.	Doubtful.	+
79	P.	1 month.	Indurated sore on penis; glands shotty in groin.	Local.	P.	+ +
80	S.	9 months.	Had a rash and sore-throat; has had eight months of treatment.	Regular.	P.	+ + + +
81	S.	7 months.	Had definite secondary lesions; glands in groin still shotty.	Regular.	P.	+ + + +

Table Showing the First 100 Consecutive Cases of Clinical Syphilis Examined—(Continued).

Observation.	Stage.	Duration of infection.	History of case.	Treatment.	Result.	Degree of reaction.
82	S.	7 years.	A bad case of syphilis; had been treated continuously for 18 months; had 50 injections of Hg.; has had no active signs for some months.	Regular.	P.	+ + + +
83	S.	6 months.	Hard sore on penis; general rash; treated for three months.	Regular.	N.	0
84	S.	9 months.	Had well-marked rash.	Regular.	P.	+ + +
85	P.	3 weeks.	Hard indurated sore on lower lip; submaxillary glands enlarged.	None.	P.	+ + +
89	S.	6 months.	Had a general rash and sore-throat; now no active signs.	Regular.	P.	+ + +
90	S.	6 months.	Bad case of syphilis, ulcer of palate, &c.; patient salivated.	Regular.	P.	+ +
94	T.	12 years.	Tumour in abdomen in region of liver.	Irregular.	N.	0
95	S.	6 years.	Severe attack of syphilis with nervous symptoms; still suffers occasionally from ulcers of thigh.	Regular.	N.	0
96	S.	6 months.	Rash and sore-throat; has been treated about five months.	Regular.	P.	+ + +
97	S.	13 months.	Had a well-marked rash, but has had no symptoms for some time.	Regular.	N.	0
98	S.	3 months.	Well-marked areolar rash.	None.	P.	+ + + +
99	S.	—	Syphilis of larynx; thickened upper lip.	—	P.	+ +
100	T.	17 years.	Syphilitic neuritis five years ago; now has Argyll Robertson pupil. Commencing tabes?	Regular.	P.	+ +
101	S.	5 months.	Rash and sore-throat.	Slight.	P.	+ + + +
103	S.	3 years.	Has has no new symptom for over two years; treated for two years.	Regular.	P.	+ +
104	S.	3 months.	General glandular enlargement and areolar rash.	Slight.	P.	+ + +
105	S.	6 months.	Had a general rash; now well-marked ulceration of palate; salivated.	Regular.	P.	+ + + +
106	S.	5 months.	Mucous patches, sore-throat, and enlargement of glands; definite history of syphilis six years ago.	Regular.	P.	+ + + +
110	T.	—	No active signs now.	Regular.	N.	0
111	T.	—	Gumma of sterno-mastoid muscle.	—	Doubtful.	+
112	T.	—	Tertiary syphilis.	—	P.	+ +
117	Para S.	—	General paralysis of insane; paralytic stage.	—	P.	+ + + +
118	Para S.	—	" " " " "	—	P.	+ + + +
119	S.	18 months.	Had secondary symptoms up till two months ago; had a severe attack.	Regular.	P.	+ + + +
120	S.	6 years.	Slight condylomata.	Regular.	P.	+ + + +
121	S.	9 years.	Retinitis pigmentosa of left eye.	Regular.	N.	0
122	S.	3 years.	Rash, &c., two years ago; treated for 18 months.	Regular.	P.	+ + + +
123	S.	3 years.	Had secondary symptoms up till 12 months ago.	Regular.	P.	+ + + +
125	S.	6 months.	Had rash, sore-throat, and general glandular enlargement; 15 injections of Hg.	Regular.	P.	+ + + +
126	S.	14 months.	Continuously treated for over one year.	Regular.	N.	0
127	S.	5 years.	Had secondary symptoms till two years ago; treated for four years.	Regular.	N.	0
128	S.	10 years.	No active symptoms.	Irregular.	N.	0
131	S.	—	Secondary syphilis.	Slight.	P.	+ + +
132	S.	4 months.	Sore-throat; general glandular enlargement; no rash; slight salivation.	Regular.	P.	+ +
133	S.	3 months.	Hard indurated chancre on penis; groin glands not enlarged; characteristic ulceration of tonsils.	None.	P.	+ + + +
134	S.	16 months.	No fresh symptoms for 10 months; treated continuously for 15 months.	Regular.	P.	+ +
135	S.	6 months.	Rash and condylomata.	Irregular.	P.	+ + +
136	Cong. S.	2 years.	Ulcerated throat.	—	N.	0
140	T.	20 years.	Aortic aneurysm.	—	P.	+ + + +
141	P.	—	Primary syphilis.	—	P.	+ + +
142	S.	—	Ulceration of soft palate and larynx.	—	P.	+ + + +
143	S.	—	Late secondary.	—	P.	+ + + +
145	P.	10 days.	Slight enlargement of groin glands.	None.	N.	0

P = positive reaction. N = Negative reaction. The plus signs are proportional to the degree of inhibition of hæmolysis.

Influence of treatment.—On this point there seems to be at present a considerable diversity of opinion. Citron (7) noted that treated cases give the reaction less frequently than untreated ones; Fleischmann (16), Fisher and Meier (15), Selenew,* and others say that there is little or no relation between the reaction and the amount of treatment. But treatment does appear to influence the reaction in a considerable number of cases, though we cannot expect the reaction to disappear as soon as we consider the patient has had sufficient mercury. The length of time during which the reaction persists after all symptoms have disappeared seems to vary greatly; in some of the cases examined it disappeared in some six or nine months, while in others—usually severe cases, however—it persisted for three or four years, or even longer. This must be taken to indicate that the infection is much more easily overcome under the influence of treatment in some cases than in others, which, again, is quite in accordance with clinical data. Good examples of this are seen in the case of observations No. 82 and No. 83. Under the influence of treatment the reaction, though it does not disappear rapidly, tends to become gradually less and less as the case improves. In a few cases the reaction came back after it had been away for several months without any visible new symptom appearing, meaning probably that the patient had not been sufficiently treated, and was probably developing some new lesion. But a persistent absence of the reaction over a period of several months must mean that the syphilitic virus is no longer in the system producing or stimulating the substance which gives the Wassermann reaction. The sera of three cases were examined before and

* Russische Zeitschrift für Haut- und Geschlechtskrankheiten, November, 1908. Cited in Münchener Medicinische Wochenschrift, 1909, No. 17, p. 876.

after treatment with 100 grains of sodium para-amino-phenylarsonate (soamin), and in two of these the reaction had disappeared. More data are required before we can be certain of many of the points concerning the influence of treatment, and all that one can do just now is to advise that energetic treatment should not be continued after the reaction has disappeared and continues absent, even though the usual period of energetic treatment has not been completed, the patient, of course, being kept under observation for many months, if not years, after the reaction has disappeared. By this method a patient might be saved from many months of unnecessary and depressing treatment.

Clinical value of the reaction.—The value of such a sero-diagnostic test for syphilis must be considered as of the highest importance, for in it we have a sure method of diagnosing many of the out-of-the-way manifestations of a syphilitic infection. The differential diagnosis of this disease in the primary stage is often far from easy, while the actual demonstration of the spirochæta pallida in the lesion is a tedious and difficult process and one not likely to be successful in any large number of cases. Accordingly, if we can make certain that the doubtful lesion is a primary syphiloma, we can without any scruples commence the proper treatment at once, in this way not wasting valuable time—as is often done—in allowing secondary symptoms to make their appearance. On the other hand, if it is another lesion, we can save the patient many months of unnecessary treatment and anxiety. A good instance of this is seen in the case of L. B., who had had a small but hard ulcerated sore on his penis for about two months. The nature of the sore being very doubtful his serum was examined for the Wassermann reaction but gave a negative result. About a week later a rather ill-defined general erythematous rash appeared, but as the patient said that he not infrequently suffered from such a rash he was still considered not to have syphilis and no anti-syphilitic treatment was given. A month later the sore had healed up and his serum again gave a negative reaction, and up till now, five months after the appearance of the sore, he has had no sign of syphilis. A distinguished clinician had considered the case one of syphilis and had proposed to carry out a drastic treatment socially and medically.

In the case of doubtful extra-genital chancres the reaction will prove to be a considerable help, as frequently these lesions are atypical.

A. P., a female, aged 24 years (observation No. 85), came to the out-patient department with an ulcer of about the size of a sixpenny-piece in a median position on her lower lip. The margins of the sore did not present any characteristic induration; the submaxillary glands were hard and enlarged. She said that she had just suffered from an attack of scarlet fever, during which she had had a very bad throat. The provisional diagnosis was that the lesion was probably not luetic. Her serum, however, gave a marked Wassermann reaction, and about a month later she developed a typical secondary syphilitic rash.

In the secondary period, especially in the latter stage, it is frequently very difficult to tell whether the symptom which the patient presents is or is not of a syphilitic nature, and more especially is this so if the patient is ignorant of or denies the possibility of any previous syphilitic infection. Cohen (9) has shown that this test can be of great assistance in ophthalmic work, and one can readily see its value in the nerve clinic in helping to clear up the diagnosis of many doubtful cases, and in confirming that of parasyphilitic affections at an early period.

Mrs. F., aged 35 years (observation No. 99) from whom no definite syphilitic history could be obtained, complained of a gradual loss of voice during the last three years. Her voice was very husky, and there was an ulcerated patch on her upper lip, which was considerably thickened and indurated. The diagnosis was syphilis or lupus; her serum gave a marked positive Wassermann reaction; she was then put on anti-syphilitic remedies, and since then there has been a marked improvement in her condition.

Again, many skin lesions of this stage are very difficult to diagnose. J. S. (observation No. 56), a butcher, came to the out-patient admission complaining of a pompholyx-like eruption on his hands, which he said disappeared in a few weeks' time, but always reappeared. He was seen by several clinicians, and the diagnosis lay between a trade dermatitis and a syphilitic eruption. There was a definite history of an attack of syphilis six years previous to this, for which he had undergone two years' treatment. The Wassermann reaction was distinctly positive, and under anti-syphilitic treatment the vesicles soon disappeared.

In tertiary syphilis, the reaction will prove of extreme value, both from a surgical and pathological point of view. In the surgical clinic it will be of great help in aiding us to determine whether the lesion is of a syphilitic, tubercular, or even malignant, origin. In course of time, no doubt, we shall also be able to tell definitely whether many lesions, which we now suppose are those of tertiary syphilis, are of a syphilitic origin at all. Four cases of aortic aneurysm were examined, from two of which a syphilitic history was obtained, and in three of these cases a marked positive reaction was obtained. Observation No. 53, W. D., had a large ulcerating area over the lower and anterior aspect of his left tibia. He says he suffered from syphilis some 18 years previously, while shortly before this he had an operation on that leg for tubercular bone disease. The diagnosis was tubercle or syphilis. The Wassermann reaction, however, gave a positive result.

While on the subject of the immunity to syphilis, many fresh points will come to light and elucidate such laws as those of Profeta and Colles. Observation No. 152, an apparently healthy primipara, aged 20 years, from whom no history of a previous attack of syphilis could be obtained, gave birth to a full-term male child. The child presented well-marked signs of congenital syphilis and lived about three weeks. Both the mother and the child gave marked positive Wassermann reactions, and in the liver of the child spirochæta pallida was demonstrated by the silver stain.

Another interesting case was that of observation No. 106. The patient said he was treated for an attack of syphilis six years ago, but six months ago he was diagnosed as having a hard chancre on his penis. Now he has well-marked signs of secondary syphilis—general glandular enlargement, sore throat, mucous patches on the mouth, and what appears to be a hard sore on his penis. His serum gave a marked positive Wassermann reaction. Evidently he is now suffering from an acute syphilitic infection, and if he really had an attack six years previously we must suppose that this is a second attack of syphilis.

CONCLUSIONS.

1. That Wassermann's reaction possesses a sufficient degree of specificity to make it of considerable value from a diagnostic and therapeutic point of view.

2. That apparently certain extracts of congenital syphilitic livers give the most consistent results, whereas the antigen cannot be kept for any considerable period without losing to a large degree its specific qualities. The serum may be kept some weeks without losing any of its properties if it be kept sterile.

3. That a marked positive result is a certain sign of a syphilitic infection, but a negative result does not always mean that no infection exists or has existed.

4. That at present it is not possible to give a definite opinion as to the influence of treatment on the reaction, or as to what extent the reaction can be used to indicate whether sufficient treatment has been given or not, as the results obtained seem to differ in almost every case. But one can say, as a rule, that the more complete the treatment has been, the less likely is one to find the reaction present some two years after the infection.

5. That energetic treatment should be commenced at once after a positive reaction has been obtained in every case, without waiting for the development of further symptoms.

Many of the sera examined were obtained from sailors of the Royal Navy, and I cannot conclude without expressing my great indebtedness to Fleet-Surgeon A. R. Bankart for the pains which he personally took to obtain the sera and for his help in carrying out the tests at the London Hospital. I have also to thank Mr. Russell J. Howard of the London Hospital, Dr. A. Malcolm Simpson of St. Peter's Hospital, and Dr. J. Sangster Greig, West Ham Workhouse, for additional clinical and pathological material. Lastly, I wish to thank Dr. W. Bulloch of the London Hospital for his kind advice and interest during the course of the work.

Bibliography.—1. Bauer: Deutsche Medicinische Wochenschrift, 1908, No. 16, p. 698. 2. Bauer and Meier: Wiener Klinische Wochenschrift, 1908, No. 50, p. 1965. 3. Bordet, J.: Annales de l'Institut Pasteur, 1900, tome xiv., p. 257. 4. Bordet and Gengou: Annales de l'Institut Pasteur, 1901, tome xv., p. 289. 5. Blumenthal: Cited in Berliner Klinische Wochenschrift, 1908, No. 11, p. 572. 6. Bruck and Stern: Deutsche

Medicinische Wochenschrift, 1908, No. 11, p. 504. 7. Citron, J.: Report of the XIV. International Kongress für Hygiene und Demographie, Berlin, 1907, Band 4, p. 101. 8. Camus and Pagnier: Comptes Rendus de la Société de Biologie, Paris, 1901, tome liii., p. 734. 9. Cohen, C.: Berliner Klinische Wochenschrift, 1908, No. 18, p. 877. 10. Cohen: Soc. Roy. de Sci. Med. et Nat. de Brux., 1906, tome lxiv., p. 158. 11. Crendiropoulo: Annales de l'Institut Pasteur, 1908, tome xxii., p. 729. 12. Dopter, C.: Annales de l'Institut Pasteur, 1905, tome xvii., p. 753. 13. Elias, Neubauer, Porges, and Salmon: Wiener Klinische Wochenschrift, 1908, No. 21, p. 743. 14. Eitner: Wiener Klinische Wochenschrift, 1908, No. 20, p. 729. 15. Fischer and Meier: Deutsche Medicinische Wochenschrift, 1907, No. 52, p. 2169. 16. Fleischmann: Berliner Klinische Wochenschrift, 1908, No. 10, p. 490. 17. Fornet and Schereschewsky: Münchener Medicinische Wochenschrift. 1907, No. 30, p. 1471. 18. Gengou: Annales de l'Institut Pasteur, 1902, tome xvi., p. 734. 19. Hecht: Wiener Klinische Wochenschrift, 1908, No. 50, p. 1742. 20. Hoehne, F.: Berliner Klinische Wochenschrift, 1908, No. 38, p. 1717. 21. Klausner: Wiener Klinische Wochenschrift, 1908, No. 7, p. 214. 22. Landsteiner, Müller, and Pötzl: Wiener Klinische Wochenschrift, 1907, No. 46, p. 1421. 23. Lambotte: Centralblatt für Bakteriologie, Orig., Band 30, No. 22, 1901, p. 817. 24. Levaditi and Yamanouchi: Comptes Rendus de la Société de Biologie, Paris, 1907, tome lix., p. 740. 25. Levaditi and Marie: Ibid., 1907, tome lix., p. 872. 26. Levaditi and Yamanouchi: Ibid., 1908, tome lx., p. 349. 27. Marie and Levaditi: Annales de l'Institut Pasteur, 1907, tome xxi., No. 2, p. 138. 28. Michaelis: Berliner Klinische Wochenschrift, 1907, No. 46, p. 1477. 29. Moreschi: Berliner Klinische Wochenschrift, 1905, No. 37, p. 1181. 30. Muir and Martin: Journal of Hygiene, 1906, vol. vi., p. 275. 31. Muller and Oppenheim: Wiener Klinische Wochenschrift, 1906, No. 29, p. 894. 32. Much and Eichelberg: Medicinische Klinik, 1908, No. 18, p. 671. 33. Meirowsky: Berliner Klinische Wochenschrift, 1909, No. 4, p. 152. 34. Noguchi: Journal of Experimental Medicine, 1909, No. 1, p. 85. 35. Noguchi: Ibid., 1909, No. 2, p. 392. 36. Neisser and Sachs: Berliner Klinische Wochenschrift, 1905, No. 44, p. 1388. 37. Neisser, Bruck, and Schucht: Deutsche Medicinische Wochenschrift, 1906, No. 48, p. 1937. 38. Porges and Meier: Wiener Klinische Wochenschrift, 1908, No. 6, p. 206. 39. Sachs and Altmann: Berliner Klinische Wochenschrift, 1908, No. 45, p. 494. 40. Sachs and Rondoni: Zeitschrift für Immunitätsforschung, Orig., Band. 1, 1909, p. 132. 41. Schürmann: Deutsche Medicinische Wochenschrift, 1909, No. 14, p. 616. 42. Slatineau and Danielopolu: Centralblatt für Bakteriologie, Orig., Band xlix., 1909, p. 290. 43. Stern (M.): Zeitschrift für Immunitätsforschung, Orig., 1909, Band 1, p. 442. 44. Tschernogubow: Berliner Klinische Wochenschrift, 1908, No. 47, p. 2107. 45. Wassermann, Neisser, and Bruck: Deutsche Medicinische Wochenschrift, 1906, No. 19, p. 745. 46. Wassermann and Bruck: Deutsche Medicinische Wochenschrift, 1906, No. 12, p. 450. 47. Wassermann and Plaut: Deutsche Medicinische Wochenschrift, 1906, No. 44, p. 1769. 48. Weil and Braun: Wiener Klinische Wochenschrift, 1908, No. 5, p. 151. 49. Widal and Le Sourd: Comptes Rendus de la Société de Biologie, Paris, 1901, tome lii., p. 841.

THE BIOLOGICAL SYPHILIS-REACTION, ITS SIGNIFICANCE AND METHOD OF APPLICATION.

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THE biological syphilis-reaction consists essentially in the absorption of hæmolytic complement by a mixture of syphilitic serum and organ-extract. Wassermann, Neisser, and Bruck[1] when they first made the observation believed that the reaction depended on the presence of spirochætæ in the organs from which the extracts were made, acting along with homologous anti-bodies in the serum (a specific antigen and anti-body reaction). The subsequent discovery by Marie and Levaditi[2] that an extract of guinea-pig's liver could serve as "antigen" led to a modification of the original view; it was further established that the substances employed were soluble in alcohol and that various lipoid compounds[3] were capable of producing a deviation of complement in the presence of syphilitic serum.

The practical value of the test as a means of diagnosis has already been established, and it is possible that systematic observations on the behaviour of the serum in cases of syphilis may yield valuable therapeutic indications. In view of this we have considered it advisable to deal in some detail with the methods of performing the test which we have found to give constant results, and also to indicate the various means whereby variations in the different factors, due to physical and other agencies, may be controlled. In the first place it is advisable to employ a method whereby the amount of complement absorbed can be measured in terms of "hæmolytic doses." For this purpose three series of tubes are employed: Series *A*, containing in each tube 0·6 of a cubic centimetre of emulsion of organ-extract; Series *B*, containing 0·05 of a cubic centimetre of the serum to be tested in 0·6 of a cubic centimetre salt-solution; and Series *C*, containing the mixture of the test amount of organ-extract (0·6 of a cubic centimetre) and serum (0·05 of a cubic centimetre). The complement-containing serum is then added; to Series *A* and *B*, 1, 2, 3, 4, &c., minimum hæmolytic doses, and to Series *C*, 7, 10, 15, 20, 30, 40 doses. In every instance a preliminary estimation of the hæmolytic dose of the complement is made, and this is further controlled by incubating amounts of complement in 0·6 of a cubic centimetre salt-solution along with the above series. After one and a half hours at 37° C. the test corpuscles, one cubic centimetre of a 5 per cent. suspension of washed ox-blood sensitised previously with at least five minimum doses of immune body from the rabbit, are added. The mixtures are again incubated and the result is read at the end of one and a quarter hours when the tubes are removed from the incubator. After standing overnight at room temperature the reading is again taken; both results are almost identical in every case. The accompanying table gives the details of an experiment performed according to this method, showing the comparative deviating properties of a syphilitic and a normal serum. In this experiment the amount of complement necessary to lyse one cubic centimetre of sensitised ox-blood corpuscles was 0·01 cubic centimetre.

Table showing the Comparative Deviating Properties of a Syphilitic and a Normal Serum.

Series A.	(1)	(2)	(3)	(4)		
Emulsion of extract of syphilitic liver	0·6	0·6	0·6	0·6		
Complement...	0·01	0·02	0·03	0·04		
Sensitised ox red blood corpuscles (added after 1½ hours)	1·0	1·0	1·0	1·0		
Series B.	(5)	(6)	(7)	(8)		
Syphilitic serum* (in 0·6 c.c. normal saline)	0·05	0·05	0·05	0·05		
Complement...	0·01	0·02	0·03	0·04		
Sensitised ox red blood corpuscles (added after 1½ hours)	1·0	1·0	1·0	1·0		
	(9)	(10	(11)	(12)		
Normal serum* (in 0·6 c.c. normal saline)	0·05	0·05	0·05	0·05		
Complement...	0·01	0·02	0·03	0·04		
Sensitised ox red blood corpuscles (added after 1½ hours)	1·0	1·0	1·0	1·0		
Series C.	(13)	(14)	(15)	(16)	(17)	(18)
Liver extract emulsion	0·6	0·6	0·6	0·6	0·6	0·6
Syphilitic serum*	0·05	0·05	0·05	0·05	0·05	0·05
Complement...	0·07	0·1	0·15	0·2	0·3	0·4
Sensitised ox red blood corpuscles (added after 1½ hours)	1·0	1·0	1·0	1·0	1·0	1·0
	(19)	(20)	(21)	(22)	(23)	(24)
Liver extract emulsion	0·6	0·6	0·6	0·6	0·6	0·6
Normal serum*	0·05	0·05	0·05	0·05	0·05	0·05
Complement...	0·07	0·1	0·15	0·2	0·3	0·4
Sensitised ox red blood corpuscles (added after 1½ hours)	1·0	1·0	1·0	1·0	1·0	1·0

Italics mean that lysis has occurred in this tube.

* The sera were heated for half an hour at 57° C.

Series *A* shows that, whereas 0·01 cubic centimetre of complement is sufficient to lyse 1 cubic centimetre of sensitised ox red blood corpuscles, 0·02 cubic centimetre of complement is necessary when 0·1 cubic centimetre of alcoholic extract of syphilitic liver is present; that is to say, 0·6 cubic centimetre of the emulsion of organ-extract is by itself able to absorb one dose of hæmolytic complement.

Series *B* shows that as regards power of complement absorption the heated syphilitic and normal sera are alike, each being able to absorb one dose of hæmolytic complement.

Series *C* shows that the syphilitic serum in presence of the liver extract has absorbed over 40 doses of complement,

[1] Deutsche Medicinische Wochenschrift, 1906, No. 19, S. 745.
[2] Annales de l'Institut Pasteur, 1907, tome xxi., p. 138.
[3] McKenzie: Journal of Pathology and Bacteriology, 1909, vol. xiii., p. 313.

whereas the normal serum with the same extract has not been able to absorb seven.

As the result of the examination of a large number of cases, and the repeated examination of the same serum under different conditions, *the reaction has been arbitrarily defined as positive when lysis is incomplete with five hæmolytic doses of complement in addition to the sum of the amounts inhibited by serum and by organ-extract alone.* Thus the serum from 125 out of 135 cases of syphilis examined in this way gave a positive reaction, and 107 out of 108 cases with no evidence or history of syphilis gave a negative result. These control cases comprised a wide variety of different conditions—acute diseases, such as pneumonia, enteric, typhus, scarlet fever, and eclampsia, as well as chronic affections with profound wasting, malignant disease, and tuberculosis.

In regard to the hæmolytic methods, only such points as bear specially on the Wassermann reaction are mentioned below; for further information reference should be made to Muir's "Studies on Immunity."

The hæmolytic system.—Five cubic centimetres of defibrinated ox-blood are mixed with two to three volumes of 0·85 per cent. NaCl solution and centrifugalised; then the supernatant fluid is pipetted off, and the proceeding is twice repeated; finally, the sharply centrifugalised sediment (which should measure three cubic centimetres) is suspended in 100 cubic centimetres of salt-solution. The blood-suspension is sensitised by adding five minimum hæmolytic doses of immune-body. *Immune-body* is the serum of a rabbit which has received several intraperitoneal injections of washed ox-blood; four, five, and six cubic centimetres, injected at intervals of a week, usually yield ten days after the last injection a serum of which 0·001 cubic centimetre is the minimum hæmolytic dose—that is, will just lyse one cubic centimetre of blood-suspension after one hour at 37° C., in the presence of excess of complement (0·1 of a cubic centimetre of fresh guinea-pig's serum treated beforehand at 0° C. for one hour with an equal volume of washed ox-blood corpuscles to remove any natural immune-body). The immune serum is stored in lengths of quill tubing which are drawn out at the ends; about one cubic centimetre of serum is drawn up into each tube, which is then sealed and heated at 57° C. for one hour on three or four successive days, so as to sterilise it and to destroy the complement. Blood to which five minimum hæmolytic doses of immune-body have been added constitutes a very delicate test for complement. As a rule from 0·005 to 0·01 cubic centimetre of fresh guinea-pig's serum causes complete lysis of 1 cubic centimetre of sensitised ox-blood suspension in one hour at 37° C. Other hæmolytic systems may of course be employed, but the above is recommended on account of its convenience and its extreme sensitiveness as a reagent for the detection of complement.

The extract is prepared by reducing the organ to a pulp (according to most workers the liver of a case of congenital syphilis is to be preferred) and making a mixture of one part of organ pulp with four parts of 96 per cent. alcohol; this is allowed to stand for two or three days at room temperature and is then filtered. It ought to be made up in considerable quantities so as to insure reliable comparative results. We have found an alcoholic extract efficient after ten months. In the experiment (see above) 0·6 cubic centimetre of a mixtare of one part of extract with five parts of salt solution is taken for each tube. The presence of a larger proportion of alcohol in the emulsion leads to destruction of the complement. We[4] have found, in agreement with Sachs and Rondoni,[5] that the amount of complement deviated in presence of syphilitic serum depends on the turbidity of the emulsion of organ-extract and salt solution; thus we found that a clear emulsion made by diluting one part of a 1 : 2 alcoholic extract of syphilitic liver with five parts of salt solution, deviated less complement in the presence of a syphilitic serum than did the same extract when first diluted with an equal volume of 96 per cent. alcohol and then made into a turbid emulsion by adding one part of this diluted extract to five parts of salt solution. (*Rapid mixture* of the solutions produces a *clear* emulsion, while a *turbid* emulsion may be obtained by first floating the alcoholic extract on the surface of the saline in a narrow tube and then causing a *gradual mixture* by rotating the tube.) It is advisable to employ such a turbid emulsion and to make it up in bulk before each experiment, so as to insure uniformity throughout. The importance of using a uniform and turbid emulsion is evident from the fact that a syphilitic serum may give a negative result with a clear emulsion and a positive result with a turbid emulsion. In no case have we seen a normal serum give a positive result with a turbid emulsion. The emulsion of extract should not have a lytic effect on the corpuscles by itself, otherwise it is impossible to estimate the amount of complement absorbed by the extract alone.

The serum which is to be tested is withdrawn from a vein and is allowed to coagulate, the clot is then separated from the side of the glass; after 24 hours it is pipetted off and centrifugalised, and should then be heated for half an hour at 57° C. This procedure diminishes somewhat the deviating power of a syphilitic serum, but is necessary in view of the fact that a considerable proportion of sera in other diseases react positively when unheated, but negatively when heated; for example, 28 cases of scarlet fever, eight of enteric fever, six of typhus fever, and four of eclampsia were examined in the fresh state and also after heating for half an hour at 57° C.; of the fresh sera eight of scarlet fever, four of enteric fever, two of typhus fever, and two of eclampsia showed incomplete lysis with 15 doses of hæmolytic complement in the presence of organ-extract; the same sera, after heating, showed complete lysis with the same extract on the addition of three doses of hæmolytic complement; these sera were examined in series of six to ten specimens at a time and in each case controls were made with syphilitic sera. Again, sera which have been allowed to stand for some time may of themselves exercise a very marked inhibitory effect on hæmolytic complement; this is removed by heating for half an hour at 57° C. although the power of deviating complement in the presence of organ-extract is retained by syphilitic sera.

The complement is contained in fresh guinea-pig's serum which is allowed to separate from the clot for from 18 to 24 hours and is then pipetted off. For the preliminary estimation a dilution of one part of serum with three parts of salt-solution is made, and of this 0·01, 0·02, 0·03, 0·04, 0·05, 0·06 cubic centimetre are added to a series of tubes each containing one cubic centimetre of blood-suspension to which immune-body has been added at least a quarter of an hour previously (for the measurement of these amounts a 0·1 cubic centimetre capillary pipette graduated to 0·0025 cubic centimetre is employed). The tubes are then placed at 37° C., and after shaking every quarter of an hour the amount of complement in the tube which is just clear at the end of one hour is taken as the dose for the subsequent estimation. It is to be noted that not infrequently the complement content falls slightly in the control tubes, where the serum is incubated with salt solution prior to adding the test corpuscles. The complement-containing serum is a variable factor in the test, thus: 1. The minimum hæmolytic dose varies; usually it is between 0·005 and 0·01 of a cubic centimetre, though sometimes both limits are exceeded. According to the original method of carrying out the Wassermann reaction, the complement of 0·1 of a cubic centimetre of guinea-pig's serum must be completely absorbed if the reaction is to be regarded as positive; this amount of serum may represent in one case 40 doses of complement and in another barely seven. 2. The same mixture of emulsion of organ-extract and syphilitic serum may deviate the complement of different guinea-pigs' sera to a variable extent; thus in one experiment half as much again was absorbed of the complement of one serum as of another, although the hæmolytic dose of both was the same. This difference in deviability does not depend on the presence of natural immune-body for the test corpuscles in the complement serum, but in the present state of our knowledge must be classed as due to individual properties of the sera.[6]

The emulsion of organ-extract by itself fixes a certain amount of complement; two to three doses are usually required in order to cause complete lysis in the control-tubes where the complement and emulsion have been incubated before the test corpuscles are added. In some cases much more is

[4] Browning and McKenzie: Journal of Pathology and Bacteriology, 1909, vol. xiii., p. 325.

[5] Berliner Klinische Wochenschrift, 1908, No. 44, S. 1968.

[6] This point is entered into in detail in another publication by the authors in the Zeitschrift für Immunitätsforschung, vol. ii., Orig., 1909.

absorbed, and the general result is that the complement of serum rapidly separated from freshly shed blood is deviated to the greatest extent. As such recent serum seems to be notably unstable it is better to allow it to stand for 24 hours, as recommended above. Whether the blood is defibrinated or allowed to clot appears to make little difference. We would also recommend that *where the complement is absorbed to a more than usual extent by the organ-extract emulsion alone (i.e., where more than four doses are required to cause complete lysis), it is safer to reject the results as an abnormal complement is being dealt with.* The variability of the complement-containing serum cannot yet be completely controlled, and consequently conclusions as to the effect of clinical factors, such as treatment and duration, on a case can be drawn from the biological test only after repeated systematic observations.

The question then remains as to what information is afforded by a positive result of the reaction. Under the conditions which have been specified above, a positive result indicates that the serum proceeds from a subject infected with syphilis, frambœsia (Blumenthal,[7] Bruck and Stern [8]), or trypanosomiasis. In regard to the two latter diseases it is not yet known whether the changes in the serum are so pronounced or so constant as in syphilis. Thus, so far as inhabitants of the temperate zones are concerned a positive reaction practically excludes every disease but syphilis. Negative reactions which have been recorded in cases of active syphilitic infection are probably due to various causes which have not yet been completely analysed. Sachs and Altmann[9] found that for a positive reaction in some cases a certain degree of diminished alkalinity is necessary, whereas the addition of acid failed to confer inhibitory properties on non-syphilitic sera. The possible presence in the complement-containing serum or the syphilitic serum of a considerable amount of natural immune body for the test corpuscles has been adduced as an explanation of negative reactions. The question of natural immune-bodies in the complement serum has been referred to above. Noguchi[10] has recommended the use of human blood as the test suspension to obviate any possibility of the action of normal immune-bodies in the syphilitic serum. On the other hand, of course, two different syphilitic sera in the presence of the same emulsion of organ-extract may deviate the same complement to widely different degrees, although both are practically wanting in natural hæmolytic immune-body for the test ox corpuscles.

It is not yet possible to say whether or not the fact that a serum yields a positive reaction is proof of the presence and pathogenic activity of living spirochætæ in the host. The reaction does not become distinct until some time after the appearance of the primary sore (from 15 to 30 days—Levaditi, Laroche, and Yamanouchi[11]), but thereafter it has been found present in a marked degree at all stages in cases presenting definite lesions. On the other hand, during latent periods 50 per cent. of cases react negatively (Wassermann[12]). Does this result mean that the reacting substances are not elaborated and set free in the serum to any notable extent so long as a condition of equilibrium exists between the spirochætæ and the tissues of the host? Again, in the so-called para-syphilitic affections, general paralysis and locomotor ataxy, in which spirochætæ have not been demonstrated in the tissues hitherto, it is said that the reaction is slight at first and becomes more marked in the later stages (Marie et Levaditi[13]). Is it possible that here some intercurrent condition may call from abeyance into renewed activity metabolic processes which were originally set up as the result of the syphilitic infection?[14] These are questions which must be answered by the outcome of further experiment.

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Glasgow.

[7] Semaine Médicale, 1908, No. 12, p. 143.
[8] Deutsche Medicinische Wochenschrift, 1908, Nos. 10, 11, and 12, S. 401, 459, and 504.
[9] Berliner Klinische Wochenschrift, 1908, No. 14, S. 699.
[10] Journal of Experimental Medicine, vol. xi., No. 2, p. 392.
[11] Comptes Rendus de la Société de Biologie, 1908, tome i., p. 720.
[12] Wiener Klinische Wochenschrift, 1908, No. 21, S. 745.
[13] Comptes Rendus de la Société de Biologie, Paris, 1907, tome lxii., p. 872.
[14] Browning and McKenzie, Journal of Neurology and Psychiatry, May, 1909.

THE SERUM DIAGNOSIS OF SYPHILIS:

AN ANALYSIS OF 200 CONSECUTIVE SERA EXAMINED FOR THE WASSERMANN REACTION IN WHICH A MODIFIED NEISSER'S TECHNIQUE WAS USED.

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As there must necessarily be considerable difficulty in obtaining the liver of a syphilitic fœtus in which the treponema pallida can be demonstrated, the scope of the Wassermann reaction would be considerably increased if some easily obtained tissue could be used in the place of the fœtal syphilitic liver. Many writers have used extracts of various syphilitic and non-syphilitic organs, but the consensus of opinion seems still to be in favour of Wassermann's original technique, although it is now generally accepted that the reaction is not a specific one, and that it is more probably an increase in the lipoid content of syphilitic serum rather than the interactions between a specific body and an antigen that produces the complement fixation.

It is possible that a certain amount of this substance is present in all sera and is increased in various diseases, and that this excess is most marked in syphilis. Diagnosis here therefore depends on quantity and not only on presence or absence; and the various reagents must be employed in such proportions that only excess above a certain point will produce inhibition of hæmolysis. Excess of tissue extract produces inhibition of hæmolysis in all sera whether syphilitic or not, and this is also true of absolute alcohol up to a certain quantity, beyond which complete hæmolysis occurs.

If absolute alcohol is used in the place of an alcoholic tissue extract a difference of hæmolysis in syphilitic and normal sera is seen, but this difference is not nearly so marked as when a tissue extract is used. Even in the absence of either extract or alcohol hæmolysis appears to be more rapid in normal than in syphilitic sera. When I depended on the hæmolytic action of human serum on sheep's corpuscles instead of adding special hæmolytic serum I did not obtain such clear results. That treatment has some effect on this complement-fixing substance would seem to be indicated by the lower proportion of positive results obtained in patients who have undergone regular treatment.

For the following 200 tests I have, at the suggestion of Professor G. Dreyer, used an alcoholic extract of normal rabbit's heart in the place of an extract of syphilitic liver and the value of the test seems in no way to have been diminished. (See Table II.)

Technique.

The following technique, which is a modification of Neisser's technique, has been employed throughout.

Heart extract.—A rabbit's heart is stripped of pericardium and washed free from blood with normal salt solution. Two grammes of heart tissue are minced and pounded and ground into a cream, and made up to 20 cubic centimetres with absolute alcohol and well shaken. After 24 hours this may be centrifuged and the clear alcoholic extract removed. Considerable time is saved and, I think, perhaps greater accuracy obtained if complement, heart extract, and normal saline are mixed in bulk (instead of separately in each test-tube), and then measured into the test-tube and the serum added. By this method there are only two pipette measurements instead of four. I have used three controls, one normal serum, one certainly syphilitic serum, and one without any serum. I have used 2·5 cubic centimetres normal saline, 0·2 cubic centimetre heart extract, and 0·1 cubic centimetre fresh guinea-pig serum (complement), and mixed these in bulk in a sterile flask (e.g., if I had 17 sera to examine, which with the three controls would make 20, I should take 50 cubic centimetres saline, 4 cubic centimetres heart extract, and 2 cubic centimetres fresh guinea-pig serum). After well shaking I should place 2·5 cubic centimetres of this mixture in each of 20 small test-tubes and add 0·3 cubic centimetre of either decomplementised serum to be tested, or control serum, or control saline without serum respectively.

The tubes are then placed in an incubator at 37° C. for one and a half hours. A dilution in normal saline of rabbit's

serum that has been rendered hæmolytic to sheep's corpuscles is then prepared of such a strength that 1 cubic centimetre of this dilution when added to 1 cubic centimetre of a 7·5 per cent. suspension of sheep's corpuscles will just produce complete hæmolysis when incubated for five minutes at 37° C., thus using velocity of reaction rather than the end point as my guide.

For each serum to be tested and for the three controls 1 cubic centimetre of a 7·5 per cent. suspension of sheep's corpuscles and 1 cubic centimetre of the diluted decomplementised hæmolytic serum are taken and mixed together in bulk (= hæmolytic system). There is plenty of time to estimate the hæmolytic power of the serum and to prepare the correct dilution and mix the dilution of serum and the suspension of corpuscles while the tubes of heart extract, serum, and complement are undergoing their one and a half hours' incubation. After this complement fixation period in the incubator the tubes are removed and 2 cubic centimetres of the hæmolytic system are added to the contents of each tube, and the tubes are well shaken and replaced in the incubator for two hours, when they are removed and placed in an ice-chest for 12 hours, after which they are examined for the reaction. The amount of inhibition of hæmolysis will be found to vary and any definite inhibition of hæmolysis I have taken as a positive reaction, while only those tubes that macroscopically show complete hæmolysis have been considered to give the negative reaction.

Analysis (see Table I.).

In primary syphilis 17 out of 22 cases (77 per cent.), in secondary syphilis 73 out of 84 (87 per cent.), and in tertiary syphilis 9 out of 10 (90 per cent.) gave a positive reaction. I obtained a higher percentage of positive results in primary syphilis than has been usually obtained, but in half the positive cases either the sores had been present for three months or the secondary rash appeared within a fortnight. In four out of the five negative primaries the sores had been present less than six weeks. Of 38 cases of secondary syphilis that had been under treatment less than six months 35 gave a positive reaction (92 per cent.), and of 10 cases that had undergone more than two years' treatment 7 gave a positive reaction (70 per cent.).

TABLE I.—*Reaction and Percentages in 200 Cases.*

	Result of serum test.	Final clinical diagnosis. Primary syphilis.	Secondary syphilis. No treatment.	Secondary syphilis. Treatment.	Tertiary syphilis.	Diseases possibly syphilis.	Pneumonia.	Scarlet fever.	Other diseases not syphilis.
Reactions.	Complete inhibition of hæmolysis	11	21	47	8	4	4	1	1
	Partial hæmolysis	6 (17)	0 (21)	5 (52)	1 (9)	2 (6)	3 (7)	0 (1)	2 (3)
	Complete hæmolysis	5	2	9	1	1	12	7	47
Percentages.	Complete inhibition of hæmolysis	50	91·3	77	80	57·1	21·0	12·5	2
	Partial hæmolysis	27 (77)		8 (85)	10 (90)	28·6 (85·7)	15·8 (36·8)		4 (6)
	Complete hæmolysis	23	8·7	15	10	14·3	63·2	87·5	94
	Complete inhibition of hæmolysis		81 (87)						
	Partial hæmolysis		6						
	Complete hæmolysis		13						
	Total cases (200)	22	23	61	10	7	19	8	50
			84				77 non-syphilitic.		
		116 syphilitic.							
Totals.	Complete inhibition of hæmolysis	87		75·0 (85·4)				7·8 (14·3)	
	Partial hæmolysis	Total reactions 12 (99)		Total percentages 10·4			Total Reactions 5 (11)	Total percentages 6·5	
	Complete hæmolysis	17		14·6			66	85·7	
		116		100·0			77	100·0	

Of healthy persons (8) all were negative = 100 per cent.

TABLE II.—*Results Obtained by Different Observers.*

—	Wassermann original technique.	F. W. Mott, Candler and Henderson Smith.	Konrad Hillier (Australia).	Ivy McKenzie (*Journal of Pathology*).	Present series.
Fluid used	Blood.	Cerebro-spinal fluid.	Blood.	Blood.	Blood.
Extract used	Syphilitic liver.	Syphilitic liver.	Syphilitic liver.	Syphilitic liver.	Rabbit heart.
Number of syphilitic cases	1982	49	75	55	116
Inhibition of hæmolysis = positive reaction	70 per cent. (90 per cent. manifest symptoms). (50 per cent. latent syphilis).	82 per cent. (89 per cent. general paralysis).	80 per cent.	85 per cent.	85·4 per cent.
Number of non-syphilitic cases	1010	—	27	58	77 (19 of pneumonia).
Macroscopically complete hæmolysis = negative reaction	100 per cent.	100 per cent.	100 per cent.	98·2 per cent.	85·3 (with pneumonia), 93·1 (without pneumonia).

The 11 cases of secondary syphilis that gave a negative reaction consisted of two old cases (over ten years ago) in which the patients had had two or more years' treatment, one case in which there had been treatment for one year and nine months, four cases of treatment for from seven to nine months (all of the seven foregoing cases showed no symptoms), two cases of treatment for three months or under, one case (90) was a very early secondary with multiple sores on the vulva but no rash, and one case (152) was an ulcerated throat diagnosed as syphilitic but with no rash.

That the reaction is not produced as a result of mercurial treatment is shown by the primary cases and by the fact

that out of 23 cases of secondary syphilis in which no treatment had been received 21 cases gave a positive reaction (91·3 per cent.), compared with 52 out of 61 cases (85 per cent.) of secondary syphilis in which treatment had been received.

The one negative tertiary case was that of an ulcerated larynx, which improved under mercurial injections, and was diagnosed as syphilitic, though the patient denied having ever had syphilis.

Of 77 cases of non-syphilitic disease, 66 gave a negative reaction, and included gonorrhœa (16), pneumonia (11), tubercle (8), scarlet fever (7), measles (6), enteric fever, diabetes, influenza, soft sores, and carcinoma. Of eight healthy surgical cases (hernia, fracture, &c.) all were negative, as were also all the cases of tubercular infection, gonorrhœa, and carcinoma.

Of the 11 non-syphilitic cases that gave a positive reaction seven were cases of post-critical pneumonia (specimens taken before the crisis being all negative), one was of scarlet fever, one of measles, one of pernicious anæmia, and one of mastoid disease in a boy, aged 14 years. In this last case the serum was 7¼ days old, and at that time I did not know that a complement-fixing substance may develop in normal decomplementised sera on keeping for some time, which, according to C. H. Browning and Ivy McKenzie, is lost on reheating to 57° C.; this loss on reheating does not occur with the complement-fixing substance in syphilitic sera. It is, of course, impossible to be absolutely certain that some of these patients may not have had syphilis at some time, although in every case such infection was denied.

Of 29 cases in which the clinical diagnosis was uncertain when the blood was taken, the serum reaction and subsequent clinical diagnosis agreed in 18 and disagreed in four which were diagnosed later as syphilitic and in which the serum diagnosis was negative. Of these four three were primary sores with under six weeks' history and one was a case of ulceration of the larynx. In the other seven cases the clinical diagnosis is still uncertain. In two cases of sores on the penis (63 and 149) and one of papular rash (118) the diagnosis was considered possibly syphilitic but the serum diagnosis was negative, and later the cases turned out clinically to be non-syphilitic. Two cases of leucoderma-cervicis with no other syphilitic symptom gave a positive reaction.

That a positive reaction was only obtained in seven out of ten cases that had undergone two years' or more treatment (70 per cent.) suggests that there is a possibility of using the reaction as a test as to when an infected person is completely free of the disease, and I hope shortly to be able to test the reaction of 20 patients who have received regular treatment under continuous supervision for from two to three years.

In conclusion, I have much pleasure in recording my thanks to Professor Dreyer of Oxford both for his help and advice and for sending me the heart extract that I have used; to Dr. Charles Slater, director of St. George's Hospital laboratories, for his help and kindness in going through all the tubes and checking my results; to Mr. Arthur Shillitoe, Mr. Charles Gibbs, and Mr. E. C. Hughes, surgeons to the London Lock Hospital; to Dr. W. L. M. Goldie, resident medical officer to the London Fever Hospital; to Mr. W. J. C. Keats, medical superintendent to the Hammersmith Infirmary; and to Dr. H. D. Rolleston, Dr. Cyril Ogle, and Dr. Arthur Latham, physicians to St. George's Hospital, for their courtesy in permitting me access to their patients. I also have pleasure in acknowledging my indebtedness to Dr. R. A. Gibbons's Research Fund for a grant towards the expenses of this work (received March 29th, 1909).

PS.—Since writing the above I have determined the reaction in 50 more sera, including 8 cases of locomotor ataxia, in 4 of which there was complete inhibition of hæmolysis (= 50 per cent.), 16 cases of cancer, 10 normals, 5 pneumonias, 5 measles, and 5 phthisis, all giving a negative reaction; and 1 case of certainly congenital syphilis, which gave a positive reaction.

Brook-street, W.

MERCHANT TAYLORS' SCHOOL.—The Merchant Taylors' School has now been added to the list of institutions which have been granted full recognition (in chemistry, physics, and biology) by the Conjoint Board of the Royal Colleges of Physicians of London and Surgeons of England.

A NOTE ON TRACHEOTOMY CASES IN THE COURSE OF WHICH THERE WERE LONG PERIODS OF INABILITY TO DISPENSE WITH THE TUBE.

BY DUNCAN FORBES, M.D. EDIN.,
AND
RICHARD M. COURTAULD, M.D. CANTAB.

CASE 1.—The patient, a female, aged two years, suffering from diphtheria, was admitted to the Brighton Isolation Hospital on March 19th, 1908, the tenth day of illness. Tracheotomy having been performed on admission, the tube was first removed on March 22nd; but it soon had to be replaced owing to the breathing becoming difficult; and subsequently, for a period of seven months, dyspnœa always supervened, sooner or later, whenever the tube was removed. During this time, the dyspnœa being thought to be due to laryngeal spasm, various expedients were resorted to—viz., removing the tube while the patient was sleeping, gradually cutting off the air entering the tube, and removing the tube and plugging the tracheal opening for gradually lengthening periods. But no improvement resulted from these measures. Next, on the hypothesis that the tube was causing irritation in the larynx, a low tracheotomy was performed on June 24th, and the original opening was allowed to close. As there was still no improvement, the patient was next placed deeply under chloroform with the view of abolishing any spasm, but her breathing, when the edges of the wound were approximated, was as bad as ever. Finally, on Oct. 9th, after a period of over three months during which no remedies were tried, the tube was once more removed and the opening was covered with a dressing, no attempt being made to keep the tracheal opening patent. There was huskiness with slight dyspnœa at first, but this steadily diminished. In three or four days from the removal of the tube the breathing was nearly normal, and in ten days from the removal of the tube the patient was discharged. She has since that time remained well.

CASE 2.—The patient, a male, aged four years, suffering from diphtheria, was admitted to the Brighton Isolation Hospital on Dec. 23rd, 1901, the fifth day of illness. He underwent tracheotomy soon after admission, and was obliged to wear a tube during the whole time that he remained in this hospital. On April 18th, 1902, he was transferred to another hospital, where he was under treatment for the next 14 months, sometimes as an in-patient and sometimes as an out-patient. The treatment consisted in the removal of granulation tissue. In June, 1903—that is to say, about 18 months after the tracheotomy—he underwent an operation, still with the object of removing granulation tissue, and at about the same time his tonsils and adenoids were also removed. These operations were followed by a gradual recovery.

A similar case, in which tracheotomy was performed in June, 1901, and the tube not finally removed until early in 1902, occurred at the Leith Infectious Diseases Hospital.

In the three cases mentioned above feathers were used for the removal of membrane and secretion from the trachea. One has heard of no case of prolonged retention of the tube in which these were avoided and tracheal forceps used. After operation neither feathers nor tracheal forceps are likely to be required if a sufficiently large tube be used: the smaller the tube in relation to the lumen of the trachea the less the effective power of the cough.

The histories of, and the experience gained from, the above and other cases indicate: (1) that considerable patience must be exercised in the treatment; (2) that if the patient remains in hospital there is every hope of his final recovery; (3) that it is doubtful if active interference has any beneficial result; (4) that the amount of obstruction varies from time to time, and that the removal of the tube should be undertaken when this is at a minimum; (5) that only occasional attempts to find out the degree of obstruction should be made (not more than once in three weeks or a month in prolonged cases); (6) that the principle of early removal of the tube is right (an attempt to remove finally should be made some 48 to 72 hours after the operation); (7) that the use of feathers should be avoided; (8) that no

advantage seems to be gained by the replacement of the metal by a rubber tube; and (9) that fenestration of the tubes allowing of the passage of air through the larynx is not found to lead to improvement.

Brighton.

Medical Societies.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Beri-beri.—Pneumonic Plague.

A MEETING of this society was held on May 21st, Sir PATRICK MANSON, the President, being in the chair. The discussion on Beri-beri (published in THE LANCET of April 24th, p. 1180) was continued.

Dr. C. W. DANIELS said that the etiology of beri-beri was one of the most difficult subjects in tropical medicine, and that on account of a large number of considerations which complicated the issues it had been almost impossible to do any constructive work. The question of the preparation of rice had been prejudiced by the use of antitoxic serums, and it must be remembered that there was a great difference between fresh rice and husked rice. So-called Indian rice did not grow in India nor was it prepared or cured in the same way as rice was in India. It was steamed and heated for seven or eight minutes and during the process was never warmer than a hot poultice. This preparation took place after a lengthened soaking in water during which the grain often sprouted. The result was certainly not sterilisation. With reference to the question of beri-beri in ships, he thought that those of them who had heard Professor Holtz speak at the Epidemiological Society were quite unconvinced by his arguments that beri-beri was a form of scurvy. Whatever beri-beri might be in the Norwegian ships there was no doubt that the beri-beri which was seen in the London docks was true tropical beri-beri. It often appeared on board ship within a month after leaving the port. Rice flour was often used as an adulterant of white flour, and the bread and biscuits consumed by sailors were sometimes largely composed of rice although they did not know it. Uncured rice, which Braddon alleged to be the cause of the disease, was used everywhere in England, on board ship, and all over the world, and if Braddon's views were true it ought to be excluded from their households. The question was one of great importance, and feeding experiments under rigid conditions in which there would be absolute control of the food were essential to the settlement of the true causes of beri-beri.—Sir WILLIAM TREACHER said that his experience as a layman left him with an open mind on the subject. The feeding experiments certainly supported the rice theory, but most of them would remember instances in which beri-beri affected one community living amongst others and eating the same food. One usually was affected and another was not, although both got their rice-supply from the same sources.—Mr. T. P. BEDDOES said that on the Amazon where no rice was eaten beri-beri was prevalent and that the type was malignant.—Dr. W. HARTIGAN said that in different schools in Hong-Kong in which the food was exactly the same there had been a wide variation in the incidence of beri-beri.—Mr. HAROLD MCFARLANE (Hong-Kong) said that at St. Paul's College in Hong-Kong there were outbreaks of beri-beri among the students almost every year and that all sorts of rice had been tried without effect.—Professor RONALD ROSS said that other experiments conducted on more exact and searching lines should be initiated.—Sir PATRICK MANSON said that the weight of opinion amongst those who had spoken in the discussion was opposed to the rice theory of origin. Until they had more facts at their disposal his own position was one of suspended judgment.—Dr. F. M. SANDWITH, at the request of Dr. A. T. STANTON, who was now working at the subject of beri-beri at Kuala Lumpur, drew attention to the original account of that disease by Bontius, and showed copies of the first Latin editions of this author, in addition to an English translation published in London in 1769. James de Bondt, better known to librarians as Jacobus Bontius, took his medical degree at Leyden in 1624 and three years later left home for Java, where the Dutch had already planted themselves. He seems to have been the first physician appointed by the Dutch East India Company, and though he unfortunately died after only four years in the tropics, he left behind him valuable writings, which contain the earliest information accessible to Europeans of the natural history and diseases of Java. Bontius wrote a chapter "On a particular kind of paralysis which the natives call Beri-beri," and tells us that he himself, his wife, and son all suffered from that malady. Dr. Stanton finds that one of the plants recommended by Bontius, *Vitex trifolia*, is still used by the natives of Malaya in the form of a vapour bath for rheumatism and beri-beri.

A paper on the Epidemiology of Pneumonic Plague was communicated by Captain C. A. GILL, I.M.S., Lahore. The writer considered that primary pneumonic plague in all its stages was intimately associated with the bubonic variety. When occurring as an original infection it was associated with a preceding rat epizootic in the same way as bubonic plague. It rapidly tended to die out as such with or without being succeeded by a bubonic outbreak. Its mode of spreading was "direct" from man to man, but owing to the readiness with which rats became infected it was liable to give rise to a further rat epizootic, which in turn gave rise to a bubonic plague epidemic. In estimating the effect of pneumonic plague on the general spread of the disease its power of producing bubonic outbreaks required to be taken into consideration. Pneumonic plague played a definite though variable part in the specific septicæmia called plague, of which, perhaps, it formed the expression of an unusual or "exalted" degree of virulence. If these opinions were confirmed by further experience it would be seen that it was easy to underrate the influence of that form of the disease and incidentally the part played by man in the spread of plague. The introduction of one case might be followed by the most serious consequences, and it was impossible to say where plague infection existed that it would not burst forth with redoubled intensity, as was the case in London at the time of the Great Plague in 1665. That did not seem particularly likely in India, but it was of interest to remember that the cases of plague (fortunately at present very few) which occurred at intervals in Glasgow and Liverpool were of that variety. Moreover, it appeared to him, in regard to the question of the reappearance of plague in Great Britain, that it was that form of the disease which was most likely to occur if unfortunately it should do so at all. Finally, if he might hazard an opinion founded on the conclusion that pneumonic plague was an expression of an "exalted" degree of virulence of the plague organism, he would say that a decrease in the prevalence of pneumonic plague was likely to be one of the earliest signs of the decline and final disappearance of the plague epidemic in India.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on May 12th, Dr. J. Michell Clarke being in the chair.—The meeting was devoted to a discussion on Treatment by Ionisation or Cataphoresis.—Dr. H. P. Tayler (Bradford-on-Avon) gave an account of the Clinical Application of Ionic Medication in General Practice, quoting eight cases of rodent ulcer which he had treated by the introduction of zinc ions with most encouraging results; also various other conditions benefited by ionisation, such as granular lids, brachial neuritis, trigeminal neuralgia, and diphtheritic ulcer of the external ear. He described the technique adopted for ionic medication in general, and the particular modifications necessary for the different metallic ions or acid radicles which were employed.—Dr. Lewis Jones (St. Bartholomew's Hospital) gave a short description of the Theory of Ions upon which this treatment depended, illustrating by practical demonstration the migration of ions in an electrolytic solution, showing how in a solution of sodium sulphate particles of copper from a copper electrode penetrated into a pad of porous paper from the positive electrode, while the hydroxyl group was collected at the negative. He continued to deal with various theoretical considerations connected with the introduction of different ions into living tissues, and concluded with instances of the applicability of specific ions to numerous diseased conditions.—Mr. J. W. McBain (Lecturer on Chemistry, University of Bristol) said that on the physico-chemical side ionisation had assumed very great importance and had led already to valuable results. He foresaw a great field of usefulness for this method of treatment in medicine. Both theoretically and

practically it was possible to introduce metals and salts into the tissues of the body by this means.—Dr. W. Kenneth Wills said that he had met with excellent results in ionic treatment of rodent ulcer. He inquired what had given Dr. Lewis Jones the best results in lupus erythematosus, as zinc ions appeared to be of little use. Not much success had been obtained in treating ulcers where cartilage and bone were involved. Sinuses yielded to the introduction of iodine ions, though he was not prepared to say that the particular ion mattered much in these cases.—Mr. J. Taylor mentioned the benefit derived in ozæna by the use of magnesium and copper ions; and he said that he had met with a case where a child's deafness had incidentally improved while undergoing ionisation of the naso-pharynx for ozæna. He asked what results Dr. Lewis Jones had obtained in copper ionisation of ringworm.—Dr. G. Parker debated certain theoretical points and inquired whether the combination of Bier's hyperæmic treatment with ionisation enhanced the local effect of the ions.—Dr. R. Roxburgh quoted an instance of the value of zinc ions in healing a fistula in ano which had obstinately refused to heal under surgical treatment.—Mr. E. W. Hey Groves preferred surgical measures in rodent ulcer.—Dr. P. Watson Williams discussed the treatment of latent diphtheritic infection by ionisation, mentioning the accessory sinuses of the nose.—Mr. W. H. Vickery said he had experienced the disappointing results of ionisation in cutaneous epithelioma as contrasted with the success of rodent ulcer.—Dr. G. E. Bowker gave his experience with chlorine ions in Dupuytren's contraction and the improvement resulting; he also discussed the treatment of arthritic affections with lithium ions and the application of hydroxyl ions in urethral stricture.—Dr. J. A. Nixon inquired whether the single prolonged application had any advantage over repeated short ones; also whether the distribution of ions into the wall of a cavity packed with gauze moistened with the ionisable solution took place fairly even. He described some results of treatment of papillomata and warts, saying that the naked electrode had advantages over the lint pads upon small areas. He also asked for information as to the ionic treatment in fissure and pruritus ani.—The President thanked Dr. Tayler and Dr. Lewis Jones for their kindness in opening so instructive and keenly debated a discussion. He said he should be very sorry to think with some speakers that the sort of ion used made no difference. Electro-therapeutics had suffered from the vague way in which it had sometimes been handled; in ionisation exactness might be possible and should be aimed at. For instance, salicylate ions introduced into the tissues should be recognisable in the urine. He asked for more particular details as to the treatment of trigeminal neuralgia.—Dr. Tayler and Dr. Lewis Jones replied to the various questions.—A vote of thanks was proposed from the chair to the two gentlemen and carried by acclamation.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on May 7th, Mr. R. F. Jowers, the President, being in the chair.—Dr. Walter Broadbent showed: (1) A case of Congenital Heart Disease in an undergrown boy, aged 16 years, who had a systolic thrill and marked diastolic shock in the second left space, hypertrophy of the right side of the heart, and an intense rough systolic murmur and very loud second sound, both loudest in the second left space. The lesion was probably stenosis of the pulmonary artery beyond the valve. (2) A case of General Paralysis of the Insane in a man with tremor of the lips and tongue, slow speech, pupils not reacting to light, increased knee-jerks, impotence, and incontinence of urine, but apparently no delusions. (3) A woman with advanced Progressive Muscular Atrophy of the Hand and Forearm Muscles, Spastic Gait, and Exaggerated Knee-jerks.—Dr. C. F. Bailey showed a man with Syringomyelia. There was wasting of the shoulder muscles, especially on the right side, and loss of sensation to heat, cold, and pain in the upper limbs; the end of one finger had been lost through a painless whitlow.—Dr. F. W. M. Cunningham read notes and showed the heart from a case of Ulcerative Endocarditis. The patient had previously had rheumatic valvular lesions, but was admitted to hospital a few days before death with a temperature varying between 98° and 103° F. There was enlargement of the spleen, variable and fleeting cardiac bruits, and evidence of embolism of the kidneys; also a small patch of pneumonia. The blood showed polymorphonuclear leucocytosis. Post mortem the aortic, mitral, and tricuspid valves were found affected and a patch on the wall of the left ventricle. Pneumococci were demonstrated in the lesions.—Dr. E. Duke showed an Aneurysm of the Descending Aorta, which had ruptured into the mediastinum. The patient was a Metropolitan policeman, sent down to convalesce from left-sided pleurisy; there were signs of fluid in the left chest and pain was complained of on that side. One morning he brought up some blood, and died suddenly after breakfast. Some fluid was found in the pleural cavity and a large amount of blood in the mediastinum.—Mr. A. H. Buck read notes of a case of Atonic Dilatation of the Stomach on which he had performed Gastro-enterostomy for persistent vomiting. Bilious vomiting of vicious circle type then occurred, for which he did entero-enterostomy, but, vomiting recurring, he removed the pieces of bowel previously operated upon and joined the end of the jejunum to the stomach and the duodenum to a lateral opening in the jejunum.—Dr. L. A. Parry read a paper on Some Points of Medical Interest in the new Children Act. He remarked on the improvement of extending the inspection of farmed babies to single ones. He noted that it was an offence under the Act for the custodian of a child to fail to provide medical aid. The overlying of babies by a person under the influence of drink is an offence, also the failure to provide protection from fire. He mentioned also the provisions to prevent juvenile smoking and to keep children out of public-houses.

Reviews and Notices of Books.

The Russo-Japanese War: Medical and Sanitary Reports from Officers Attached to the Japanese and Russian Forces in the Field. Official Copy issued by the General Staff, War Office, London. With photographic plates, sketches, and maps. London: Printed for His Majesty's Stationery Office by Eyre and Spottiswoode, Limited. 1908. Pp. 571. Price 5*s*.

THIS volume contains a selection of official reports which have a special bearing on the medical and sanitary conditions in Manchuria during the Russo-Japanese War. The reports were chiefly written by Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., who was sent out by the War Office as military medical attaché to the Japanese forces. The Medical Department was not represented by an attaché with the Russian army and the reports under review deal almost entirely with the Japanese army. The war between Russia and Japan lasted for a period of 21 months, and during this time some 20 engagements, large and small, were fought on land. The Russian soldiers are reported of good physique and so inured to privation in their homes that they can stand campaigning better than any other European soldier amid all kinds of discouraging surroundings. We are not, however, in possession of the figures indicating even approximately the actual sufferings of the Russian army by wounds or disease and privation. The Director-General of the Japanese Medical Services has estimated the Japanese casualties as 47,387 deaths and 173,425 wounded, 19 of the former and 104 of the latter occurring amongst medical officers. The total number of Japanese sick admitted to hospital was 236,223, of whom 27,158 were infectious cases, chiefly beri-beri. In addition 97,850 cases were admitted to hospital from mobilised units in Japan and Formosa. The total Japanese casualties (killed, wounded, and sick) therefore amounted to 554,885, and besides these 77,803 sick and wounded Russian prisoners were also treated in the Japanese hospitals, thus giving a grand total of 632,688. These statistics are approximate; as no figures of the average strength for the 21 months are available the ratio per 1000 of strength cannot be estimated. It is understood that the Japanese authorities estimate that it will take from six to eight years to compile the medical statistics and medical history of the campaign. The following medical *personnel* was employed: 4517 army

medical officers, 639 army pharmacists, 33,597 nurses and attendants; the grand total engaged in treating the sick and wounded amounting to 38,753, or if the Red Cross societies' *personnel* be added 44,465. The 5131 qualified medical men each treated on an average 123 patients. Baron Takaki has given the proportion of deaths from wounds (including both killed and subsequent deaths) as 1 to 3·94, and states that the proportion of killed to wounded was slightly higher in the case of officers than amongst the rank and file.

Contrasted with the Chino-Japanese war Baron Takaki draws attention to the following facts: (1) that cholera was practically absent; (2) that enteric fever decreased from 37·14 to 9·26 per 1000 of strength, dysentery from 108·96 to 10·52, and malaria from 102·58 to 1·96. These good results he attributes to the progress made in sanitary organisation as regards food, drink, clothing, and selection of camping grounds. The medical officer of each unit, as in the case of the British Army, is held responsible for the treatment of the sick and also from an advisory point of view for the sanitation of his charge. It is stated that the Japanese surgeon is liable to stand his trial for an outbreak of disease. When beri-beri occurred the medical officers recommended that cut barley should be mixed with the rice ration in the proportion of 1 to 2, and orders were issued to this effect. All orders based on medical recommendations are issued in the name of the officer commanding the unit or division concerned. The Japanese soldiers are naturally very cleanly in their habits, and a daily hot bath is stated to be considered even by the poorest classes almost as great a necessity as food. They are also very intelligent in recognising the importance of sanitation. The good health of the army was also largely thought to be due to the fact that there were none of the usual campaigning difficulties with regard to water, most of it being very pure. The weekly lectures given by medical officers during peace time, and also continued during active service, no doubt contributed very greatly to the same good results. Disease was considered a far more dangerous enemy than the Russians. The spirit of patriotism and self-sacrifice, which made the army such an efficient fighting machine, pervaded all ranks and gave them a lively interest in their camp sanitation and all pertaining to it. General C. J. Burnett, who acted as one of our military attachés with the Japanese forces, draws attention in his report to the advantage of employing civilian dentists with an army in the field. Special dentistry forms no part of the Japanese military medical organisation, and in war the services of civilian practitioners are requisitioned, the Government paying all expenses except material for crowning teeth, for which the patient pays. It will be remembered that our own War Office employed civilian dentists during the South African war to a limited extent, and they proved a great boon to officers and men.

In his remarks on the work of the field hospitals, Lieutenant-Colonel Macpherson notes that the essential principle throughout in the treatment of wounds was to employ aseptic rather than antiseptic dressing materials; the dressings were invariably applied dry. He mentions that the surgeons, not only in the field hospitals but also in the dressing stations, invariably wore white cotton or linen operating aprons with sleeves and caps, and that their hands were kept scrupulously clean and constantly dipped in sublimate or carbolic lotion. A large sterilising apparatus weighing 30 pounds was carried by each hospital for sterilisation of dressings, and all dressing materials were limited to one or two simple forms, these being simple aseptic gauze, absorbent wool, gauze bandages, and rubber plaster. Russian paper dressing material was at times used to economise cotton wool, and bandages washed and re-sterilised were sometimes for economy's sake used over again. As few major operations as possible were undertaken in field hospitals, it being considered unjustifiable to perform these operations in any mobile medical unit. Colonel Macpherson never saw or heard of either craniotomy or laparotomy being performed in the field hospitals of the second army, the rule in force being for field hospitals to "keep clear" for advance or retreat. With regard to amputations the Japanese field surgery was eminently conservative—in fact, the principle seems to have been carried out to an unjustifiable extent, mainly, it appears, from a view to State economy, as compensation to the soldier was awarded in proportion to the amount of loss of tissue. Amputation of a limb for gangrene caused by an elastic tourniquet being left on too long occurred in the case of several men who wandered back by themselves and spent some hours in finding the dressing station. The Japanese surgeons were content with the light of ordinary candles in the field hospital operating tents and scarcely ever used the acetylene or petroleum lamps provided. Roentgen ray apparatus did not form part of the field medical equipment, and as far as could be judged the surgeons got on very well without it, and the wounded benefited by the increased amount of dressings and appliances which could be carried in its place. A point that is not without interest, in connexion with the engagement of Sha Ho and other battles, is the manner in which the Red Cross sign of neutrality was employed by the Japanese and the measure of protection afforded by it. The Red Cross was never used by the Japanese as a protection against fire, nor did they expect it to afford them protection except when captured by the enemy. It seems that in modern battles, where the fighting is scattered over vast areas, all idea of protecting medical units by the sign of the Geneva Convention must be abandoned, although the display of the Red Cross is, of course, essential for the protection of these units and their *personnel* when a position has been captured. The extreme mobility of the field medical units, including the depôts for the supply of medical and surgical material, was noticeable, as also was the continuous and rapid system of evacuation of hospitals of all classes to the bases in Japan. The defect that stood out in marked contrast to the general excellence of the arrangements was the quality of material for the transport of sick and wounded. There was no defect in quantity, but the ambulance carriages consisted generally of improvised stretchers, heavy springless country carts, goods' vans, and so on, without any special arrangements for minimising jolting or vibration. The sacrifice of the patient's comfort to military exigencies led to fatal results in many of the more severe cases of wounds of the skull and abdomen, and consequently the statistics of operations performed in the stationary or base hospitals show a greater recovery ratio than the statistics of operations performed on cases in the field hospitals during the South African war—a curious example of how easy it may be to draw the wrong deduction from figures.

During cold weather the Japanese soldiers were given an issue of sugar which they carried in their pockets and they were told to eat it as they lay in their positions. This not only kept them awake during night operations, but appears to have increased the bodily warmth. During the campaign no case of death from extreme cold occurred, although the cooked rice ration carried by each soldier often froze solid and could not be eaten until it had been thawed, and the water froze in their water-bottles. There was a great number of cases of frost-bite among the wounded, and at the battle of Mukden the bodies of the dead became frozen at once.

Mention is made of the prophylactic use of creasote

pills (a box of which was issued to each Japanese soldier monthly) the advantages of which appear doubtful. They were ordered to take one three times daily with each meal. The amount of epidemic disease, if we exclude beri-beri, was very small, but official opinion is extremely reticent as to how far the creasote pills contributed towards this good result. Beri-beri was attributed to rice, which in the hot weather tended to ferment; the disease became less prevalent during the cold weather, and after the rice was mixed with wheat or barley. During the siege of Port Arthur considerably more than half the garrison were markedly affected with scurvy (8000 cases of scurvy being in the hospitals alone); the officers, however, suffered very little in comparison with the men. No prophylactics against scurvy, such as lemon- or lime-juice, were to be obtained by the Russian garrison, and Colonel Macpherson thinks that this lack of forethought was one of the chief causes of the early capitulation of the fortress. Citric acid was given after scurvy appeared, but this was more or less ineffective as a prophylactic, which corresponds with our own experience. The treatment of scurvy after the capitulation resolved itself into a dietetic (fresh meat and vegetables) rather than a medicinal one.

Turning to the part of the report dealing with field sanitation, we find that the disposal of the dead after actions was carried out in a very systematic manner, both by cremation and by burying without removing the clothing. In the former case 12 bodies were placed on a pyre and 15 gallons of refined kerosine oil were poured over it and the pyre was then lighted. Dealing with arrangements in the field, the question of water and its purification forms interesting reading. The selection of water-supplies was chiefly made from a rough analysis by the medical officers of units, who rode ahead with the regimental adjutant to the villages or camping grounds about to be occupied by the troops. After the wells or other sources of drinking water had been selected, a placard was put up that no washing was to take place in the well, and sentries were posted to prevent contamination. Water when muddy was clarified by the addition of alum, and in most cases it was either boiled or filtered. The apparatus for boiling was invariably improvised; as a rule, it was simply boiled over a camp fire in the soldier's water-bottle or mess-tin. Later in the war Ishiji filters were employed. Latrines were made by each squad for their own use, a pit 3 feet square and 8 feet deep being dug.

This is a most interesting volume and the General Staff of the War Office is to be congratulated on the selection of its medical representative, Colonel Macpherson, who has acquitted himself ably of an onerous task.

A System of Syphilis. Edited by D'ARCY POWER and J. KEOGH MURPHY. Vol. II. With 35 plates. London: Henry Frowde and Hodder and Stoughton. 1908. Pp. 387. Price £2 2*s.* net.

THE second volume of this "System of Syphilis" well maintains the interest of the first. The opening chapter by Mr. D'Arcy Power deals with the Surgery of Syphilis. In a short historical review he points out that although the records of early syphilis are scanty in this country it is far otherwise on the continent. The appearance of syphilis at a time when printing was becoming general led to the production of a series of monographs on the disease, which was then exciting much attention, and he was fortunate enough to discover one of these recently in London. It is a pamphlet published by Bartholomew Steber, who was professor of medicine in the University of Vienna, and was printed about four years after the introduction of syphilis into Europe. The frontispiece reproduced shows a patient with a tertiary syphilide and the method of treatment in use at that time by the application of an ointment. As Mr. D'Arcy Power points out, there are many interesting questions connected with the relations between syphilis, cancer, and tuberculosis, and their interaction with pyogenic micro-organisms. In the succeeding chapters are considered the relations of surgery to the early inflammatory lesions of syphilis—namely, those of the mouth, tongue, and other mucous membranes. Then the relations of the disease in its later stages to the sclerosing or gummatous inflammations of the bones, joints, muscles, tendons, and viscera such as the rectum are described in detail. The section concludes with an account of the treatment of syphilis and the different methods of administering mercury.

As the next section by Colonel F. J. Lambkin, R.A.M.C., is entirely devoted to a consideration of treatment, this necessarily leads to a good deal of repetition, which we think might well have been avoided, with a marked lessening of the size of the volume. Colonel Lambkin considers the whole question of treatment with great thoroughness, and in view of his very large experience of the disease his conclusions are most interesting. He is a great believer in the administration of mercury by intramuscular injections and maintains that it is by far the best method. The conclusions at which Colonel Lambkin arrives are that each and every case of syphilis requires treatment and that cases of mild or benign syphilis must not be ignored, since experience teaches us that by far the largest number of cases of tertiary manifestations follow on what is termed "benign secondary syphilis"; that mercury is a specific for syphilis in the truest sense of the term, and that the secret of the success of mercurial treatment depends on obtaining the proper degree of its intensity during the whole course of treatment; that by far the best method of administering mercury is by the intramuscular injection of the insoluble salts of mercury, which are much to be preferred to the soluble; that while calomel holds the first place as regards therapeutic intensity, metallic mercury has a more lasting effect; and that although specific treatment is absolutely essential in the treatment of syphilis, yet other therapeutical measures may be necessary in certain complicated cases.

In the routine carrying out of the intramuscular injections Colonel Lambkin starts with, as a rule, four injections of calomel at weekly intervals, followed by the injection of metallic mercury, usually at weekly intervals, for varying lengths of time and with intermissions of varying length according to the severity of the case. The preparations of mercury are made up into a cream with a palmitin basis and containing a small quantity of pure creasote and camphoric acid, which act as an analgesic and antiseptic. Since employing this formula the great drawback to the employment of calomel—namely, the excessive pain caused—has been got rid of, and the risk of the formation of abscesses or the occurrence of embolism has been reduced to a minimum. It is impossible to read Colonel Lambkin's account of his experiences with this method of treating syphilis without being impressed by its many and great advantages.

One of the most interesting chapters in the book is that dealing with the outbreak of syphilis in Uganda, which has caused much devastation amongst the inhabitants. Colonel Lambkin was appointed by the Government to proceed to Uganda and to investigate the condition, and his account certainly reveals a most deplorable state of things. There can be no question, unfortunately, but that the rapid spread of the disease which took place some 12 years or so ago was indirectly due to the introduction of civilization into the country, leading, as it did, to the emancipation of the

Baganda women and the abolition of the punishments formerly in vogue for all immoral offences. In some parts of the kingdom the incidence of the disease is said to be as high as 90 per cent., but Dr. A. R. Cook, writing to our columns on Dec. 12th, 1908, from the Church Missionary Society's Hospital at Mengo, gave figures to prove that this estimate was far too high. Another cause which no doubt contributed to the spread of the disease was the fear entertained by the local medical men of administering mercury in any shape or form to the natives. They maintained that the natives were peculiarly susceptible to its influence and became salivated after minute doses. This view was also supported by Dr. Cook in his judicious and instructive letter, in which he said that a single dose of 5 grains of calomel was almost sure to cause salivation. Colonel Lambkin, by enlisting the sympathy and the coöperation of the chiefs, has formulated a scheme for the systematic and continued treatment of the disease on a large scale by intramuscular injections, so that in the course of time, if the chiefs can maintain their influence in the matter, we may hope that the ravages of syphilis will be checked.

The last chapter contains a clear account of the main facts which are known of syphilis in its relation to obstetric medicine. It is written by Dr. W. J. Gow and contains a full description of the effects of syphilis on the pregnant mother and on the fœtus and the appropriate treatment of these conditions.

There are some 35 illustrations, including 15 coloured plates from colour photographs, all of which are exceedingly good and well reproduced. We look forward with interest to the appearance of the remaining volumes of this valuable work.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. XXIX., Fasc. 1, 1909. London: J. and A. Churchill. Pp. 87. Price 4*s.* net.

THE present fasciculus of the Transactions of the Ophthalmological Society, comprising the papers communicated during the last three months of 1908, and therefore somewhat belated, contains a considerable amount of interesting, if not very original, material. There are two papers on allied forms of corneal degeneration, one by Mr. A. C. Hudson on so-called Reticular Keratitis, the other by Mr. Herbert H. Folker on Nodular Opacity of the Cornea in Three Generations. Both conditions are markedly familial in their incidence and are probably manifestations of the same disease. The hereditary element in nodular opacity—a preferable term to nodular keratitis—has never been so well exemplified as in Mr. Folker's series of cases, most of the previous cases having occurred in siblings of one generation. Mr Hudson is wrong in stating that the first description of cases of reticular opacity was given by Treacher Collins and Haab in 1899. It was first described by Biber in 1890, followed in the same year by Haab, who called it "gittrige keratitis," and Dimmer. Mr. Hudson's case is particularly carefully reported, but he might have paid more attention to his style in writing: "the pulse is rather high tension" is not English. We also object strongly to Mr. Folker's statement that the vision of one of his patients was §. Mathematically this means that it was infinite, which is certainly not intended. There is a well-defined sequence to be observed in the record of vision, and slovenly inaccuracies of this kind ought to have no place in a professedly scientific publication. Both papers are well illustrated. Dr. F. G. Thomas and Mr. J. Herbert Parsons report an example of an extremely rare condition—viz., the presence of a dipterous larva in the anterior chamber. Myiasis, due to the hatching of the larvæ of flies in the conjunctival sac, is a well-known complaint in some parts of Russia and in Mexico, where it is called *mal de ojo*. Only three previous cases of such larvæ in the human anterior chamber are recorded, but according to the valuable information elicited from Major R. H. Elliot, I.M.S., in the course of a discussion, the disease is quite common in horses in India and is the cause of "kamri," a form of paraplegia. Major R. H. Elliot, I.M.S., contributes a paper on cataract extraction, a subject of perennial interest. The material is derived from his extensive experience in Madras. He limits the discussion to four principal points: the antisepsis of the conjunctival sac, the value of lacerating the capsule with a Bowman's needle before making the incision, the dangers of vitreous loss, and the value of free irrigation of the capsule as a means of cleansing the chamber and of replacing the iris, and preventing the impaction of tags of iris. Of these, the second has received least attention from ophthalmologists and is almost a speciality of the Madras clinic, where it was already in force under Major Elliot's predecessor, Colonel E. F. Drake-Brockman, I.M.S. Preliminary laceration of the capsule has undoubtedly many advantages; the chief objection, loss of aqueous, is due for the most part to faulty construction of needles, and, in our opinion, it is a somewhat grave one, since it places the success of the operation in too great a measure upon the shoulders of the instrument maker. The subject of cataract extraction in all its bearings cannot be too widely discussed, and every contribution from the highly experienced, if sometimes audacious and too enthusiastic, operators of India will be welcomed and carefully weighed by European practitioners. Mr. N. Bishop Harman has extended the application of the principle of Rémy's diploscope; he perhaps goes farther than is warranted in describing the "diaphragm test" as a *new* test for binocular vision. His other communication on six generations of piebalds—a study in heredity—has nothing directly to do with ophthalmology. Dr. A. Maitland Ramsay has devised a valuable spectroscopic test of colour vision; Mr. Priestley Smith has improved his perimeter; Dr. Adolph Bronner advocates iridectomy in certain cases of acute iritis; and several rare cases are reported.

Epoch Making Contributions to Medicine, Surgery, and the Allied Sciences. Collected by C. N. B. CAMAC, A.B., M.D. London and Philadelphia: W. B. Saunders Co. 1909. Pp. 450. Price 18*s.* net.

Dr. Camac has in this book collected together various papers which describe experiments and researches which have exercised a far-reaching influence upon medicine and surgery. Thus we have Lister's paper read on August 9th before the Dublin meeting of the British Medical Association in 1867 upon the Antiseptic Principle of the Practice of Surgery, which paper was an enlargement of a preliminary note which the then Mr. Joseph Lister contributed to our columns for March 16th of the same year. It is interesting when we read of Lord Lister's early efforts to exclude germs to recall to mind a case mentioned by another veteran of science—namely, Dr. Francis Galton, F.R.S., in his "Memories of My Life."[1] In this book, at p. 36, he cites the case of a man who had stumbled into a cauldron of scalding pitch. "He was quickly pulled out, but the pitch had so inclosed and adhered to one of his legs that nothing could be done with safety to remove it. The other leg was cleaned as well as might be and carefully dressed, and in that state, with one leg cased in pitch, the other bandaged, he was sent to bed. After many days the leg that was inclosed in pitch ceased to hurt, and the covering became so loose that it was easy and desirable to remove

[1] London: Methuen, 1909.

it, when lo! and behold, instead of a vast suppurating surface the leg was found to be entirely healed. The other leg which had been less hurt and carefully dressed remained much longer unhealed." This was about 1838, when Galton was studying medicine at Birmingham. Had a Pasteur or a Lister been present upon this occasion an epoch-making discovery might have been antedated by some years. Other papers in the book are Harvey's treatise, De Motu Cordis et Sanguinis, translated by Willis; Auenbrugger's and Laennec's papers upon Percussion and Auscultation respectively, both translated by Dr. John Forbes; sundry papers by Jenner upon Vaccination; Morton's two papers upon Ether and its Inhalation, with letters and other matters dealing with the discovery, including Simpson's paper upon Chloroform originally read before the Edinburgh Medico-Chirurgical Society in 1847; and, finally, Oliver Wendell Holmes's paper upon the Contagiousness of Puerperal Fever. The medical profession owes a debt of gratitude to Dr. Camac for the care which he has bestowed upon bringing all these important documents together and for publishing them in an easily accessible form, and many of them, especially the treatises of Harvey, Auenbrugger, and Laennec are masterpieces of how knowledge can be advanced by simple observation of everyday matters. The work of Lister stands upon a different plane and requires no comment here: the publication of all Lord Lister's writings is imminent and will reveal to the medical world the extraordinary blend of intuition and labour which went to the foundation of modern surgery. The principles employed in auscultation and percussion had been in use for centuries previous to Auenbrugger and Laennec, but their application awaited an observer who could apply what he saw and heard. These principles are so simple that on reading them the natural exclamation is, "Why did no one think of this before?" Auenbrugger was born in 1722 and Laennec died in 1826. For nearly the whole of these hundred years Europe was never free from war, and there was not a soldier who sounded a cask or beat the sod with the butt-end of a musket, or listened with his ear to the ground for the approach of cavalry or to detect the digging of a mine, who was not practising and profiting by percussion and auscultation. Many military surgeons must have noted these practices even if they did not carry them out themselves, and yet to none of them did it occur that if the note of a cask differed when struck below the level of the contents to that obtained above the level of the contents the same would hold good for the presence of solid or liquid matter within the chest; or that if the scraping of a spade or a pickaxe could be heard underground, the scraping of two rough surfaces within the chest could equally be heard by listening to the walls of the chest. It is pleasing to notice the modesty with which both Auenbrugger and Laennec gave their work to the world. It is the same spirit which breathes in the signature of Van Eyck to his masterpieces, "I, Jan Van Eyck, was here." And so Auenbrugger in his prophetic apologia: "I think it necessary candidly to confess that there still remain many defects to be remedied—and which I expect will be remedied—by careful observation and experience. Perhaps, also, the same observation and experience may lead to the discovery of other truths, in these or other diseases, of like value in the diagnosis, prognosis, and cure of thoracic affections." It was not long before this modest aspiration was fulfilled by the discovery of the application of auscultation to the diagnosis of morbid conditions within the thorax. And how generous an acknowledgment Laennec gives to Auenbrugger: "The percussion of the chest, according to the method of the ingenious observer just mentioned, is one of the most valuable discoveries ever made in medicine." He is, however, no less sensible than was Auenbrugger himself to the deficiencies of the method. "It is not to be concealed," he says, "that this mode of exploration is very incomplete." It is, perhaps, one of the ironies of history that Laennec should have died from a disease of that portion of the body the affections of which he had done so much to relieve. He died from pulmonary tuberculosis in 1826, being in his forty-fifth year.

Much has been discovered in medicine, but how much still remains dark? Modern observers have methods at their disposal which were undreamt of even in the middle of the last century. The science of bacteriology is of recent growth, cytology is yet an infant, but even so the principles of observation and comparison which inspired the early workers whose labours Dr. Camac has gathered together remain for us who have taken up the burden which they have laid down. It may be—nay, we feel it is sure—that by patient watching, by careful collation of facts, and by the combined work of the cytologist, the pathologist, and the bacteriologist, even the hidden things of cancer will before long be made manifest. There could be no better stimulant for present-day workers in the problems of disease than to read the papers collected by Dr. Camac in this book.

LIBRARY TABLE.

Differential Diagnosis of Bacteria and Practical Bacteriology. By E. P. MINETT, M.D., D.P.H., M.R.C.S., L.R.C.P., F.C.S., Assistant Bacteriologist and Demonstrator in Bacteriology and Microscopical Pathology to Guy's Hospital. London: Baillière, Tindall, and Cox. 1909. Pp. 72. Price 2*s.* 6*d.* net.—This booklet has been written for senior students and members of the medical profession. Its aim is to present the working knowledge of practical bacteriology as met with in the laboratory with a view to the worker arriving at a rapid diagnosis of micro-organisms. The essential points of practical bacteriology have been condensed into as small space as possible with a view to the book forming a pocket companion in the laboratory. The principal staining methods are concisely given as an appendix, together with special simple methods for staining flagella, capsules, spores, &c. It is to be regretted that owing to want of space the agglutination reactions have been omitted, as also some of the inoculation experiments on animals, for some bacteria. Although somewhat concise and hard to follow in parts, this little book will, no doubt, prove useful to students preparing for examinations in practical bacteriology.

A History of the Reading Pathological Society. By JAMIESON B. HURRY, M.A., M.D. Cantab. London: John Bale, Sons, and Danielsson, Limited. 1909. Pp. 179. Price 7*s.* 6*d.*—Dr. Hurry is well known as an expert in the antiquities of Reading, as his "History of Reading Abbey" proves. And the Reading Pathological Society may well be called an antiquity, for it is the oldest Pathological Society in England, dating from 1841. Dr. Hurry gives a short *précis* of the various sessions, with lists of the papers read and of the officials of the society. One of them—namely, Dr. William Wood Bradshaw, whose widow was the founder of the Bradshaw lectures—was a very remarkable man. He studied at Westminster and Middlesex Hospitals, becoming M.R.C.S. in 1833, and in due course M.D. of Erlangen, F.R.C.S., and M.R.C.P., the last mentioned "without examination." Then he broke out in a new line and in 1844, at the age of 43 years, he matriculated at New Inn Hall, Oxford, and was "created" M.A. in 1847. It would be interesting, in view of Lord Curzon's recent memorandum, to know whether he was a member of Convocation. Bradshaw also obtained the degrees of D.C.L. and LL.D., but, says Dr. Hurry,

it is uncertain where they were obtained. At a meeting in the twenty-sixth session Dr. Wells related the treatment adopted at Vienna for an infant archduke "whom nothing would warm. The doctor got a sow into the room, killed her, opened the carcass, took out the bowels, and sewed the archduke up in the carcass. The treatment was triumphant." The date of this occurrence is not given, but it can hardly have been in the year 1866 when Dr. Wells related it. For the first 50 years of the society some member used to be asked to deliver a retrospective address at the close of each session, but in the fifty-first session an alteration was made, and it was determined to ask some distinguished member of the profession, who might or might not be a member of the society, to give an oration dealing with some important topic. The first orator was Mr. Bernard Pitts, F.R.C.S., who chose for his subject the Surgery of the Veins. Dr. Hurry, who is President of the society, has produced a most interesting book, and one upon which the society may congratulate both him and itself.

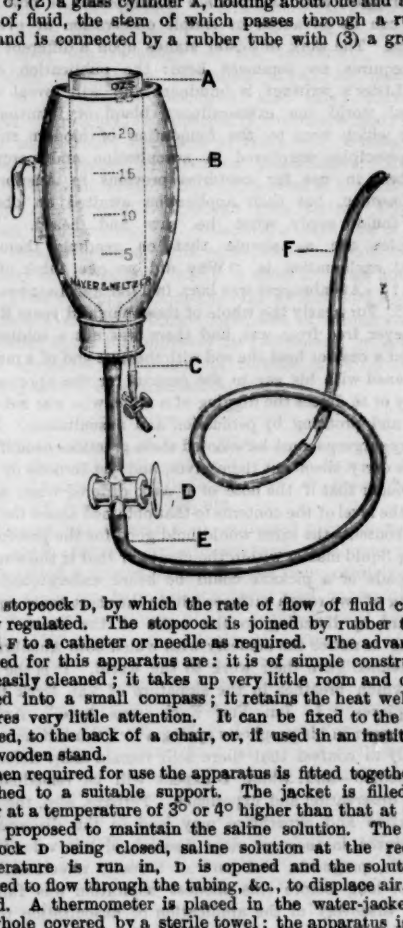
Home Nursing. By ISABEL MACDONALD. London: Macmillan and Co. 1909. Pp. 326. Price 2*s.* 6*d.* net.—Miss Macdonald is a certificated nurse who is lecturer on nursing and hygiene to various Scottish county councils. We gather from her preface that this book is mainly a reprint of her lectures in a somewhat expanded form, and it is intended to help those who may have to do with the sick and who cannot obtain the services of a trained nurse. The directions and the information given are expressed in plain and simple language, though here and there we think that too much knowledge on the part of the pupil is assumed. The first chapter lays down canons as to "what a nurse should be," and they are altogether excellent. Succeeding chapters deal with nursing in general, treated under such headings as Observation of the Sick, the Sick Room, Ventilation and Warming, the Personal Care and Feeding of the Patient. The giving of medicine and enemata are also described, but as the book is intended for those who are not trained nurses the use of the catheter is rightly not referred to. Simple dressings, the giving of baths, bandaging, and the making and application of poultices and fomentations follow, and the nursing part of the book ends with an admirable chapter on the Care of the Dead. The remainder of the book is taken up with notes on hygiene, including the health of the nurse herself, and a chapter on invalid cookery. We note one or two places which might lead to error. On p. 52 directions are given for washing out a patient's mouth with a wash made of "carbonate of soda in tepid water." Miss Macdonald means, we are sure, bicarbonate. Of course, this is popularly called carbonate, but it is not so. On p. 117 we find the following: "..... picric lotion is more often used than the ointment, but, as it is very highly inflammable. ....." A solution of picric acid, the usual strength used for burns is 1 per cent. in water, cannot be called inflammable, although a solution of picric acid if boiled may explode. On p. 318 is the following recipe, which is incomprehensible to us. "'Albumenised' Egg. Let a raw egg stand in water for twelve hours. Then strain off the water very carefully and poach." What is to be poached? Most of the egg would have diffused through the water, and how can an egg be albuminised by removing most of the albumin? Once more on p. 318 is a recipe for coffee, in which it is stated that the usual quantities are "a tablespoonful of coffee to half a pint of water." Miss Macdonald lower down says that coffee must be strong to be good. But one tablespoonful of coffee to half a pint of water would result in an infusion which an old Scottish lady of our acquaintance used to call "sugar ally water," from its likeness to that solution of liquorice beloved of children. A strict tablespoonful of coffee weighs under a quarter of an ounce. It is possible, however, to take out of a tin very nearly an ounce of coffee with a tablespoon. Miss Macdonald in her next edition should insert the word "heaped" before "tablespoonful," or still better specify a definite weight. But apart from the small blemishes which we have pointed out Miss Macdonald has written a clear and useful book.

New Inventions.

AN APPARATUS FOR CONTINUOUS IRRIGATION OR INFUSION.

THE figure illustrates an apparatus which has been made for me by Messrs. Mayer and Meltzer of Great Portland-street. It can be used for rectal feeding, continuous saline infusion (either into the rectum or subcutaneously), or for constant irrigation—in other words, for any condition in which a regulated flow of fluid at a constant temperature is required.

It consists of (1) a warm water-jacket B, which is made of either tin or copper, from which water can be drawn off by the outlet C; (2) a glass cylinder A, holding about one and a half pints of fluid, the stem of which passes through a rubber cork and is connected by a rubber tube with (3) a ground-



glass stopcock D, by which the rate of flow of fluid can be easily regulated. The stopcock is joined by rubber tubing E and F to a catheter or needle as required. The advantages claimed for this apparatus are: it is of simple construction and easily cleaned; it takes up very little room and can be packed into a small compass; it retains the heat well and requires very little attention. It can be fixed to the top of the bed, to the back of a chair, or, if used in an institution, to a wooden stand.

When required for use the apparatus is fitted together and attached to a suitable support. The jacket is filled with water at a temperature of 3° or 4° higher than that at which it is proposed to maintain the saline solution. The glass stopcock D being closed, saline solution at the required temperature is run in, D is opened and the solution is allowed to flow through the tubing, &c., to displace air. D is closed. A thermometer is placed in the water-jacket and the whole covered by a sterile towel; the apparatus is then ready for use. When the temperature of the water-jacket has fallen 5° or 6°, water is allowed to flow out by opening C and sufficient hot water added to raise the temperature of the jacket 3° or 4° above that of the saline solution.

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THE LANCET.

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The Poor-law Commission and the Use and Abuse of Hospitals.

THE question of how far hospitals may be said to be abused, either in the sense of providing medical or surgical treatment gratuitously for persons who are well able to pay for what they require, or in the sense of providing the same necessaries for persons who are already supplied with them, or would be so supplied on application by the agency of the Poor-law, is one which has often been discussed by members of the medical profession, and which, in the latter of the two aspects mentioned, could hardly fail to attract the attention of the Royal Commission which has lately inquired into the operation of the law in the relief of distress. The Commissioners desired to ascertain how far the work of the voluntary hospitals of London was actually overlapping that of the Poor-law medical services, and to this end they employed Miss NORAH B. ROBERTS as an investigator, and directed her to discover, as far as might be practicable, to what extent applicants to the hospitals have already received, or subsequently receive, medical assistance from the Poor-law, or belong to the same class of persons as those ordinarily in receipt of Poor-law medical relief. Miss ROBERTS, whose report has now been published as an Appendix by the Commission,[1] was furnished with definite instructions concerning her methods of procedure and was required to report to the Commission within two months—conditions which would appear somewhat to have limited both the scope and the nature of her inquiry. It was confined to three hospitals—the Royal Free Hospital in central London, St. Thomas's Hospital in the south, and St. Mary's Hospital in the west—and at each of these institutions all facilities were given to the investigator by the secretaries and authorities. The new patients registered in the casualty and out-patient departments of the three hospitals were found to amount to 2932 in one week, and 150 of the total number lived beyond the metropolitan area. 92 gave no address, or one that could not be located, and 587 gave the locality in which they lived, but no more precise information. These 587, together with 2081 others with full addresses, were sorted into localities and referred to the relieving officers to whose districts they belonged, and in this way the inquiry was carried into 29 unions. None of the 587 persons were discovered. 22 other names with full addresses were either not referred to the relieving officers or not referred to the right unions, and so were not taken into account. The relieving officer, in the case of each person identified, was asked to state whether *any relief* had been given either to the patient or to *any member of his family* during the six months preceding the application to the hospital, or during the three weeks subsequent thereto.

Partly from the migratory habits of persons of the class chiefly under consideration, and partly from the frequent impossibility of identifying either the patient or the family to which he belonged, the number of persons actually treated at the hospitals underwent great diminution before the residue could be satisfactorily dealt with by the relieving officers; but of the 2081 fully addressed names 140 were certified as having received relief within the period mentioned. Five of these were duplicates, registered twice at the hospital during the single week, so that the correct proportion was 135 in 2076. Of these, 107 were identical persons, while 28 belonged to identical families, a proportion equal to 6·5 per cent. of the patients. Miss ROBERTS gives satisfactory reasons, however, for believing this proportion to be far too small; and, among 233 cases afterwards visited, 11 further instances of overlapping were discovered. After careful consideration of all the ascertainable data the conclusion is reached that if the three selected hospitals afford fair samples of the work of the rest, at least 11 per cent. of the out-patients at the voluntary (general) hospitals of London are actually Poor-law cases, being in receipt of some form of Poor-law assistance either at the very time they are treated or within a half year of the treatment. If, as in 1906, 1,312,000 new out-patients attend the 30 general hospitals of London during the year, the proportion of 11 per cent. would bring up the number of their Poor-law cases to 144,320; and, in view of the piteous appeals for funds for hospitals which are distributed by every post, and are to be seen in every newspaper, it seems to be a matter for the serious consideration of the managers whether they should continue to assist the poor-rates to this extent. But this is not all, for Miss ROBERTS further says that the proportion of out-patients who "may be said to be of similar class to the applicants for medical relief from the parish," or who, in other words, are entitled to such relief and would obtain it on application, is about 38 per cent. of the whole; and 38 per cent. on 1,312,000 would be 498,560, or nearly half a million. That the maladies of any but a very small minority of such out-patients are likely to be either more correctly diagnosed or more skilfully treated in the out-patient departments of general hospitals than in the surgeries of parochial medical officers is too easily assumed, the lamentable overcrowding of these departments being forgotten. It must further be remembered that the parochial medical officer is presumed to be able, in all proper cases, to procure for the patient such assistance, in the way of food or of other necessaries, as may in an important degree promote recovery from illness; while the absence of any similar power is constantly felt by the assistant physicians and assistant surgeons to hospitals to be a serious impediment to the success of their best endeavours. Whatever reforms in the law or in its administration the labours of the Commission may produce, it will surely be expedient

[1] Report to the Royal Commission on the Poor-laws and Relief of Distress on the Overlapping of the Work of the Voluntary General Hospitals with that of Poor-law Medical Relief. By Norah B. Roberts. London: Eyre and Spottiswoode, Limited. 1909. Price 4½*d*.

that the work of providing attendance for pauper out-patients should be placed upon the shoulders to which it properly belongs and not left to the voluntary hospitals; but it follows upon this that the Poor-law medical service must be used only where the aid required is properly rewarded.

The second element in the general question, that of the abuse of the out-patient departments of hospitals by persons able to pay, formed no part of the reference made to Miss ROBERTS, and has called forth no expression of opinion from her; but it is nevertheless one upon which her report affords some evidence, and, upon the whole, evidence of a satisfactory character. No one doubts that abuse of the indicated kind exists, and would be rendered manifest by close inquiry; but we have sometimes questioned whether it is as considerable in amount as many people believe. Miss ROBERTS or her helpers visited the homes of 233 out-patients whom it was possible to identify, and cross-examined either the head of the family, or, more frequently, the wife. No verification of the statements received was possible, except when the people were known to the Charity Organisation Society or to the relieving officer; and it is more than probable that some economy of truth may have been practised on more than one occasion. The questions put included the occupation of the head of the family, his full and actual wages, the total weekly earnings of the family at the time when hospital treatment was received, the number of persons over and under 14 in the family, the rent, whether a private practitioner was usually applied to either for illness or for childbirth, whether any of the household were members of any medical club or provident dispensary, what was the distance from the hospital and the nature of the illness or accident treated there, whether the patient was self, wife, or child, and the reason for seeking hospital aid. Out of the 233 only nine cases were marked by Miss ROBERTS as cases of abuse of hospital treatment; and the particulars given, in so far as they can be relied upon, appear to support her view. 45 families or individuals were regarded as "distinctly of the Poor-law class," and 43 more as "not far removed from it." One of the cases of "abuse" was that of a woman with a "septic finger" after injury. She was the wife of a pavior who earned £2 a week, paid 7*s.* 6*d.* rent, and had only one child under 14. Others were small shopkeepers, about whose means it would be difficult to ascertain the truth; and, on the whole, the cases do not appear to be either very numerous or of an aggravated character. Still, if we remember that nine out of 233 is very nearly 4 per cent., and that 4 per cent. in the presumed number of 1,312,000 out-patients in a year would amount to over 52,000 examples, we shall not be able to avoid the inference that the abuse in question does exist, and that it ought to be diminished. If Miss ROBERTS be justified in her conclusions, and if her investigations have disclosed a close approximation to the facts, it may be considered certain that medical practitioners, especially in the poorer parts of the metropolis, are being annually deprived by the hospitals of fees which amount in the aggregate to a considerable sum. It is unquestionably more easy to point out the evil than to indicate a remedy, but Miss ROBERTS, being clearly of opinion that the arrangements at the hospitals might be improved, does not omit to make a suggestion. She recommends the appointment of fully trained lady almoners at all the hospitals, and a precise registration of patients in all departments. The methods which permitted so many of the cases treated to escape identification cannot be perfect; and the managers of hospitals may in some cases fairly be called upon to reconsider them, but we hesitate to endorse as practically wise a proposal which might entail a regular increase in the clerical staff of many of the charitable institutions concerned. It is, however, good to know that the question of hospital abuse, in at least some of its most important aspects, has been brought before the Poor-law Commission, as when legislation ensues upon the two massive reports we may fairly expect an attempt at systematic remedy.

Reforms and the University of Oxford.

THE Universities of Oxford and Cambridge are bent on reform. And this is a good sign. There can be no doubt that reforms are necessary, and if they do not come from within they will come from without, while a Government idea of reform nowadays is likely to take the same shape as HENRY VIII.'s first reform of St. Bartholomew's Hospital—namely, practical suppression and disendowment. At Oxford the Chancellor, Lord CURZON of Kedleston, himself a brilliant member of the University over which he presides, has issued a letter addressed to that University on the Principles and Methods of University Reform, while at Cambridge the reports have just been published of three committees which were formed in 1908 to consider the questions of Constitution and Government, Scholarships, and, finally, the Relations of the Colleges to the University and to one another. At Oxford the Hebdomadal Council has definitely accepted the principles of the Chancellor's suggestions as to the Reform of Council, Congregation, and Convocation, the abolition of compulsory Greek, and on certain financial questions, and is prepared to consider the various other changes recommended in the letter. It may be said that university reform has but little to do with medicine and medical education. But the universities, in common with other places of "religious and useful learning," are (to use the words of the Oxford Bidding prayer) places where it is prayed that "there may never be wanting a succession of persons duly qualified for the service of GOD in Church and State," and such a succession is a matter of interest to all classes of the body politic and perhaps to none more than to medical men. The recommendations of the Cambridge committees have not yet been considered by the University, but, as we have mentioned, the principles of the Oxford Chancellor's letter have already been accepted by the Hebdomadal Council, and committees have been appointed to formulate proposals which will be submitted to the University in due course.

We propose, therefore, to consider in what way the suggested reforms will affect the medical profession. Probably the only reform which will have any influence in this direction is the reform of the constitution. Oxford

University is governed by three bodies: (1) the Hebdomadal Council; (2) Congregation, to which must be added the Ancient House of Congregation; and (3) Convocation. Shortly, we may call them Council, Congregation, and Convocation. The constitution of the first from our point of view need not detain us, though it is, of course, important from the general point of view; therefore we will pass to consider Congregation and Convocation. Congregation was originally, in Lord CURZON'S words, "a guild composed of all the masters and teachers of the University"; it gradually became but a shadow of its former self and by 1850 the Commission of that year found that there were no College tutors upon it. Lord JOHN RUSSELL'S Act of 1854 strove to restore Congregation to what it was originally intended that it should be, but this ideal was marred by an amendment to the Bill admitting all members of Convocation domiciled within one and a half miles of Carfax. Consequently it happens that nowadays many Masters who have nothing to do with teaching are members of Congregation, while a tutor who may live outside the boundary is not so. The present Congregation is composed, therefore, of sundry high University officials, heads of houses, professors, examiners, and those qualified by residence as above stated. Lord CURZON'S suggestion that Congregation should represent not all resident masters, but only the resident *teaching* and administrative elements, seems to us the most likely foundation for a reform of that body, although a resolution outlining practically this reform was rejected by Congregation on Jan. 26th of this year. It is as well here to explain the existence of the Ancient House of Congregation. When Lord JOHN RUSSELL'S Government in 1854 created the new—i.e., the present—Congregation it forgot to disestablish the old. Consequently there still exists that body consisting of heads of houses, a body of persons who sit as "Necessary Regents"—namely, Doctors and Masters of not more than two years' standing, resident Doctors, professors, and examiners. The functions of this body are so formal that we hope no reform will do away with it, for if it does nothing else it serves as a reminder to the "Necessary Regents" of the duties which they formerly had to perform and which it might be no bad thing if they had to perform again. The most important reform, however, which is in the air is that of Convocation, and the manner of reform of this body depends much upon the shape which the reform of Congregation may take. If all members of Congregation who are simply on the roll from a residential qualification are struck off when that body is reformed (and we agree with Lord CURZON that this reform is probably desirable), those who are struck off will, be it remembered, still retain their vote in Convocation. And among the more ardent reformers there exists an opinion that it is intolerable that academic opinion, by which is meant the opinion of those engaged in, or responsible for, teaching in Oxford, should be liable to be over-ridden by a body of non-academic opinion—namely, the mass of clergy, schoolmasters, and others, physicians to wit, who live all over the country. In these days, however, of facilities for communication it is absurd to suppose that a Master of Arts living in London, or even in, say, Yorkshire, knows less about university matters than one equally unofficially connected with the university who lives within a mile and a half of Carfax. The one is as much outside opinion as the other. Therefore the reform of Congregation which seems the most feasible demands the retention of the "outside opinion" in Convocation, for otherwise certain members of Congregation will find themselves, like THACKERAY'S Ivanhoe, doubly disinherited.

From our own particular point of view we should view with the utmost regret any attempt to do away with the vote of the non-resident Masters. For as regards the needs, the working and the maintenance of the Oxford Medical School the opinion of non-resident graduates who are also medical men is of the utmost value. By the latest list of members of Convocation we see that there are 177 medical graduates. Of these possibly ten are members of Congregation. There may be some members of Convocation who have a medical qualification without having a medical degree—these we have no means of checking and they must be very few in number—so that we shall be well within the mark if we say that there are about 190 medical members of Convocation. From the point of view of medical education and as regards the welfare of the Oxford Medical School it would be a disaster if the votes of these 190 were to be done away with. If this were done, all those members of Convocation engaged in medical education outside of Oxford would be disfranchised: and as at present the majority of Oxford men who seek a medical degree study their medicine for the most part outside of Oxford, to deprive their teachers of any voice in the management of the medical school would be impolitic. Lord CURZON in his eminently judicial presentment of the various plans for reform does not even take into consideration a reform of this kind, and we merely mention it because it is, we believe, the view of one school of reformers. If we have read the Chancellor's letter aright he himself is not one of those who wish to curtail the powers of Convocation. Other methods for reform are: First, a proposal to take away from Convocation any power of interference in educational matters. This reform for reasons just stated would be strongly resented by the medical faculty. Another idea is to restrict the M.A. degree to honour men or to those who have also taken a degree in one of the superior faculties. Such a proposal has already been vetoed by Congregation on March 2nd. Thirdly, there is a proposal to make Convocation wider than at present and apparently to reduce the fees so that practically any Bachelor could become a Master and a member of Convocation. Fourthly comes a suggestion to establish something analogous to a suspensory veto, so that, for instance, if a measure were passed by Congregation by a certain majority it could only be rejected by a certain majority of those voting in Convocation. Lord CURZON seems to think that it is along these lines that the reform of Convocation may be solved (assuming that any reform is desirable) and we await with interest the reports of those committees which have been appointed to inquire into the matter. In the meantime we can only hope that nothing will be done which will deprive medical members of Convocation living outside Oxford of their right to take a share in matters affecting their own faculty. Any such move would be disastrous to the future of the Oxford Medical School; and of this school

we know by his admirable speech at the recent dinner of the Oxford Medical Graduates' Club the Chancellor has a properly high opinion.

American Methods of Milk Control.[1]

THE methods of control over the purity of milk-supplies which are in vogue in the United States are well known to be more "progressive" than any which are adopted in this country, and accordingly American proceedings are often on the one hand held up to us as examples to be copied, or on the other are pointed to by traders as warnings of the intolerable interference which may be inflicted on their business in the name of sanitary reform. The public is as yet without full information as to the scope of the Milk Bill just introduced by the President of the Local Government Board, but in view of this proposed legislation,[2] it is both opportune and instructive to study an able impressionist sketch of American methods of milk control which has lately been issued in the form of a report to that department by Dr. A. EASTWOOD, one of the representatives of the Tuberculosis Commission at the International Congress held in Washington in September last.

Dr. EASTWOOD'S observations are those of a keen and critical observer, who expresses his views clearly, and he has the advantage of an unofficial position which enables him to use considerable freedom in drawing conclusions and pointing morals for application at home. Taken as a whole, the report is distinctly encouraging to the sanitarian. If many of the reforms have been tried, after American fashion, too hurriedly or on too large a scale, and have since had to be abandoned, much has also been accomplished and become accepted on all sides as necessary and desirable. This can be gathered from almost every page of the report. To give but a few instances, and beginning with control over bovine tuberculosis, Dr. EASTWOOD first shows that ambitious programmes for "stamping out" the disease in all the herds of Massachusetts and other States have failed. Universal testing with tuberculin, compulsory slaughter of reacting animals, and compensation to farmers out of public funds were found to impose too great a strain on the agricultural community and on the monetary resources of the State. In the enthusiasm of "stamping out," precautions were neglected which are essential to the object in view, with the result that many farmers were left in a short time with stocks as much exposed to tuberculous infection as before the campaign. But, as a set-off to this, farms are to be found in many States which have been systematically cleared of tuberculosis by persistent testing and retesting, accompanied by thorough isolation, removal, or destruction of reacting animals, and have been kept free from the disease. This has been done not merely by those who keep dairy herds more for show than for profit, but also, with the assistance of the public authorities concerned, by traders whose livelihood depends on their stock and the money they make by their milk. Dr. EASTWOOD gives illustrations of the keenness of stock-owners to maintain "clean" herds, and of their general recognition from the purely agricultural standpoint of the advantage of diminishing tuberculosis. Credit for these results is largely due to the Federal Bureau of Animal Industry, which does excellent research work on a large scale at experimental stations and laboratories, and to the various Federal and State officials who have organised educational campaigns among the farmers. Demonstrations have been found of greater practical use than leaflets and lectures, and special success has attended exhibitions at country fairs and markets where tuberculous specimens are shown and explained. The establishment by the State authorities of farms where the stock is maintained free from tuberculosis has also had a valuable effect by proving that the teachings of the expert can be carried out successfully in practice. The economic advantage of preventing bovine tuberculosis is brought more prominently before the stock-owner in America than in this country by the importance of the American meat trade and the systematic veterinary supervision and inspection of slaughtered cattle and swine. But in regard to milk alone it is becoming emphasised by the greater demand, and higher prices obtainable, for milk from herds which are free from tuberculosis.

It is much the same story with the cleanliness of milk. Elaborate codes of regulations for the observance of every conceivable hygienic precaution in obtaining, handling, transporting, and storing milk have been framed, acclaimed with enthusiasm, and either dropped in a few months as unworkable or merely been forgotten. But practical methods, some of a kind which would be considered revolutionary in this country, are working smoothly and successfully in many American cities. In the District of Columbia and in various cities where the "permit" system obtains, no person is allowed to introduce milk for sale without the authority of the medical officer of health, who requires detailed information as to the origin of the supply and undertakings as to the cleanly conduct of the business, and can revoke the permit when he has cause for complaint. Elsewhere "medical milk commissions" undertake the certification of milk subject to stringent conditions, and the milk has a substantial extra value in consequence of the certificate. In other places the authorities publish their opinions on the quality of the milk supplied by the several purveyors, and do not hesitate to indicate those which are unsatisfactory. Some provide their inspectors with "scoring cards," the score of the farmer being made up of marks earned for observance of particular precautions or compliance with certain tests. In New York regulations are made as to the temperature at which milk is to be kept, and are enforced by pouring away milk found to be above the maximum limits of 50–55° F. Systematic bacterial tests are also employed in some cases. Nearly always the authorities take steps to secure cleanliness of churns and vessels used in the transport and storage of milk. As a whole, in cities where practical measures of this sort have been in operation for some time the conditions under which milk is obtained and supplied seem distinctly above those of most English towns. Dr. EASTWOOD makes an instructive comparison in this respect between similar poor-class districts in London and New York.

[1] Report on American Methods for the Control and Improvement of the Milk-supply, by Dr. A. Eastwood. Local Government Board Public Health Reports, New Series, No. 1. London: Wyman and Sons. Price 6d.

[2] See p. 1573 of this issue of THE LANCET.

It seems clear that in America satisfactory results are not often obtained by merely enforcing regulations which prohibit certain practices under penalty. While prohibitions and restrictions and punishments must be available and form the basis of administrative action, real improvements are often best secured when the public authorities keep their powers in reserve and give their energies to encouragement, guidance, or even advertisement of farmers and milk dealers who are genuinely anxious to improve their methods. It should be added that the report discusses American practices in regard to pasteurising milk, and contains observations on many other matters which deserve to be read carefully by all who are interested in the administrative bearings of this important subject.

Annotations.

"Ne quid nimis."

THE MEDICAL PROFESSION IN INDIA.

IN 1900 Lord George Hamilton, who was then at the India Office, thought it would be of great benefit to India if there were a body of men established in private practice, quite unconnected with the official medical service, which is, and always has been, more or less military. The question was again raised by the present Secretary of State in 1907 in a despatch to the Viceroy, the reply to which was sent home in August, 1908. In December Lord Morley came to the important decision that "the time has now arrived when no further increase of the civil side of the service can be allowed, and when a strong effort should be made to reduce it by gradually extending the employment of civil medical practitioners recruited in India." There can be no doubt that there is real and pressing need for a larger number of medical men in India than is at present to be found there. In the case of most of the European members of the profession, at any rate, their work is greater in extent, longer in duration, and for climatic and other reasons both physically and mentally more arduous than is desirable. The obvious remedy is to increase the number of practitioners. The Indian Government had recognised that an increase was necessary, and that as properly qualified candidates became available in India from the excellent Medical Colleges there existing, so appointments should be thrown open to them, the advance being "very gradual and tentative, and in the main, though not exclusively, from the bottom." Lord Morley has now decided that the increase in the medical work is to be met by the employment of civil medical practitioners recruited in India, that is, by Eurasians and by natives of the country. As to the intellectual and professional ability, both of the native of India—whether Bengali, Parsi, Sikh, or Mohammedan, or Madrassi, and of the Eurasian, there can be no doubt. Their mental acuteness is equal to their industry and power of application. They pass excellent examinations, they lay in a large stock of knowledge, and they devote themselves with zeal to their profession. But, speaking in general terms, and in reference to the bulk of the native medical men (admitting brilliant exceptions), it cannot be said that, as years go on, they increase either in scientific knowledge or professional skill, or in the wisdom that comes from a gradual ripening of the intellectual faculties, reinforced by practical experience. We grant freely that there are exceptions; but the fact remains that, as a general rule, though the Indian, as a student, meets on equal terms, and frequently excels, his British fellow, the mature middle-aged Indian practitioner stands in quite a different comparative relation with the European-born medical man of similar age and experience. There is undoubtedly precocity of development in the Eastern compared with the Western races: as far as concerns the particular class of men that enters the medical profession in India, the brilliant promise of youth and early manhood is not, as a rule, fulfilled: there is a want of the power of initiative, a disinclination to take responsibility, a tendency to run in a groove, characteristic, perhaps, of most people, Europeans as well as others, in advanced life, but among Orientals commonly present in early middle age. Now, we may suppose that alteration of educational methods and increase in communication with Europeans will bring about a change in this; and that the Indian-born will progress, and approximate to European characteristics, but this must be a slow process. There is reason to believe that each generation of Indian medical students is better than its predecessors, and "that this progressive improvement will be maintained" (a hope which was expressed by the Government of India in its despatch of last year). But the improvement cannot be other than very gradual, and it appears to us that the Secretary of State's decision "that the time has now arrived when no further increase of the civil side [of the Indian Medical Service] can be allowed," even though "the employment of civil medical practitioners recruited in India" be only gradually extended in order to meet the necessarily increasing amount of medical work to be done, is of doubtful wisdom and even of doubtful expediency. Progress is sure to be, and in all justice should be, in the direction of the increasing employment of the native-born medical man, but for this progress to be steady and continuous we venture to think it should be slow and deliberate, the fitness of the native-born for his increased responsibilities being measured, not by the examination successes of the youthful student, but by the gradual evolution of character in the mature practitioner.

THE EXAMINATION FOR MATRICULATION AT LONDON AND THE NORTHERN UNIVERSITIES.

IT is well known that one of the chief stumbling-blocks to the attainment of a London medical degree has for long been placed at the very outset of the curriculum of study, and many have been the attempts to modify the examination for matriculation at the University of London in order to render it more generally accessible to the student. But the Senate has hitherto firmly resisted all assaults on the outer door of its stronghold, and has only exempted from the examination such students as had put to their credit a test recognised as equivalent at the hands of some other examining board. Under Statute 116 exemption from matriculation is granted to graduates of certain British and colonial universities, and under certain conditions to holders of the senior local certificates of the Universities of Oxford and Cambridge, the higher certificate of the Oxford and Cambridge Schools Examination Board, the Scotch school-leaving certificate, the senior grade certificate of the Intermediate Examination Board for Ireland, and to men who have passed their previous examination at Cambridge. It will be noted that no other matriculation examination occurs in this list, and for some time past the joint matriculation board for the Universities of Manchester, Liverpool, Leeds, and Sheffield have been in treaty with the University of London to arrange a reciprocal

recognition of the metropolitan and northern matriculation examinations by the universities concerned. The negotiations culminated in a conference held at University College, London, in January last, at which the Vice-Chancellors and other delegates of the northern universities met representatives from the University of London and arrived at a conclusion as to which of the several subjects of the respective examinations could be accepted as equivalent. At this conference it was agreed that the Northern universities shall adopt the minimum age limit of 16 years for candidates desiring to be registered as matriculated students. The representatives of the University of London held further deliberations after this meeting, and in March they presented their recommendations to the Senate. After reporting that the northern universities have agreed to adopt the requirements of London in respect to the subjects of Greek and chemistry, they recommended that the matriculation examination of the joint board of the northern universities be recognised under Statute 116 as giving exemption from the corresponding London test upon the following conditions: That the student must pass at one examination in: (1) English language or literature and English history; (2) mathematics; (3) three of the following subjects (of which one must be either Latin or science)—Greek, Latin, French, German, geography, mechanics, and chemistry, provided that if Latin be not taken it be replaced by one of the other languages. These recommendations have now been accepted by the Senate, and the northern universities are to be congratulated on being the first to have their matriculation examination recognised by the University of London as in some respects (for London does not accept all their subjects) equal in value to its own. And it will be seen that the process by which the result has been attained has been one of levelling up and not of levelling down; there is no reason to suppose that the London Senate's act of grace will open the narrowest of back doors into the fold of its medical faculty. There is, however, also a chance that the northern matriculation, though of equal volume and intensity with the older test, may have a difference of *timbre* (if we may borrow a phonetic analogy) which novices to the trials of examinations may find more in harmony with their capacity of expression than that which too often characterises the London test. But the sign of best omen is the fact that London has found common ground on which to meet the northern universities on this matter. May this be taken as an indication that when the time comes the University of London will be prepared to show a greater liberality by advancing further still to meet the Royal Colleges that are asking for an honourable arrangement by which a London medical degree may be rendered more accessible to the London student?

THE EIGHTIETH BIRTHDAY OF DR. PAVY: AN INTERESTING PORTRAIT.

TO-DAY, Saturday, May 29th, is the eightieth birthday of Dr. F. W. Pavy, one of the best known and most learned of our physicians and physiologists, who despite the weight of years maintains himself in the van of our ranks and fights for truth as keen and vigorous a battle now as ever he did when he was winning his spurs over 50 years ago. As President of the Association for the Advancement of Medicine by Research, and as chairman of the National Committee of the International Medical Congress, he displays his unabating interest in the general progress of scientific medicine, while his recent communications[1] to our columns on Uranalysis and his lectures to the Royal College of Physicians of London last autumn on the Pathology and Treatment of Diabetes Mellitus[2] prove how completely he continues to be a master of the principles and technicalities of the branch of therapeutics with which his name will always be associated. At this appropriate moment we have received a proof of a facsimile made by Mr. G. R. Way of 6, Gough-square, Fleet-street, of the portrait of Dr. Pavy by Mr. W. Strang, A.R.A., which is hanging in the rooms of the Royal Society of Medicine. The portrait, as equally the reproduction in facsimile, displays Mr. Strang's well-known qualities. It is extraordinarily vivid and clear, rather uncompromising, and very economical of line. All Dr. Pavy's friends must have seen him look exactly like the presentation; it is reminiscent of the man in every way and the life-like effect is obtained with the minimum of effort on the part of the artist. The issue is limited to 100 proofs and is published at one guinea each copy. Dr. Pavy's friends and admirers are so numerous, and his connexion with medicine so long and honourable, that we shall expect to learn that the edition is soon exhausted.

[1] THE LANCET, July 27th (p. 223) and August 3rd (p. 290) and 10th (p. 361), 1907.

[2] THE LANCET, Nov. 21st (p. 1499) and 28th (p. 1577) and Dec. 12th (p. 1726), 1908.

THE OXFORD GRADUATES' MEDICAL CLUB.

THE summer dinner of the Oxford Graduates' Medical Club was held on May 20th at the Hotel Cecil, the occasion being the twenty-fifth anniversary. The chief guest was the Chancellor of the University, Lord Curzon of Kedleston, and Sir William Church, K.C.B., was in the chair. Other guests included the Vice-Chancellor, Dr. T. H. Warren, President of Magdalen; the Provost of Queen's, the Rector of Lincoln, the Master of University, the Warden of All Souls, Sir William Anson, M.P.; Mr. J. G. Talbot, M.P.; Sir Clifford Allbutt, K.C.B., Regius professor of physic in the University of Cambridge; Dr. H. A. Miers, Principal of the University of London; Mr. Henry Morris, President of the Royal College of Surgeons of England; Mr. Henry Lucas, treasurer of University College Hospital; Mr. J. G. Wainwright, treasurer of St. Bartholomew's Hospital; the Rev. Dr. Gow, headmaster of Westminster; Mr. A. G. Vernon Harcourt, Dr. Squire Sprigge, and Dr. Dawson Williams. After the usual loyal toasts, that of "The Club" was proposed by the chairman. He was glad to be able to announce that, owing to the liberality of Brasenose College, the Chair of Anatomy was now adequately endowed, and that the department over which Professor Arthur Thomson so ably presided was no longer the Cinderella of science. It gave him great pleasure to tell them that Dr. Theodore Williams, a member of the club, had instituted a medical scholarship of £100 at his old College, Pembroke, and, moreover, that he was founding two University scholarships in anatomy of £50 a year tenable for two years, and two similar scholarships in physiology in relation to medicine. The toast of "The Guests" was proposed by Dr. W. P. Herringham in his usual felicitous manner, and was responded to by the Chancellor and the Vice-Chancellor. Lord Curzon said that to the majority of people Oxford was identified with the study of humane culture, but that few outside the University remembered that Oxford was once the home of medicine. In the presence of the Warden of All Souls he must refer to the fact that three at any rate of the most illustrious of Oxford medical men were Fellows of All Souls. And what a range of accomplishments these great men had; what splendid versatility had some of them shown. First of the three stood Linacre, scholar, ecclesiastic, and physician, great in each and every one of these capacities, whose memory survived in the splendid benefaction that bore his name in

the University and in the Royal College of Physicians of London, of which he was one of the founders and the first President. Then there was Sydenham—Sydenham who has been described as the English Hippocrates and the intimate friend of Locke, of whom all remembered that he was a philosopher, but few that he was also a physician. Thirdly came Wren, great as an anatomist and an astronomer even before he won fame as an architect. He would add the names of Harvey, once the head of an Oxford College, and of Radcliffe. The Chancellor then referred to the darkness which settled upon Oxford during the last century, and after recalling the labours of Acland, Rolleston, and Burdon-Sanderson, he concluded: "But even when the night was darkest the dawn was nigh; I do not think there has been any more dramatic, more inspiring, or more creditable page in the history of learning than the steps by which science has fought its way back into Oxford until, at the present moment, it sits enthroned alongside the humanities and has a crown of equal authority and prestige upon its brow." The Vice-Chancellor, who also responded, began by asking the Chancellor in the old Oxford formula: "Domine Summe Cancellarie, licetne anglice loqui." As Vice-Chancellor he expressed himself proud of the position which the Oxford Medical School holds at this time and he expressed his thanks to founders and benefactors, more especially to his old friend, Dr. Gustave Schorstein, that philosophical and unselfish practitioner whose death was so severe a bereavement to themselves and to science. Also he must add the name of Dr. Theodore Williams. In the name of the University of Oxford he thanked those benefactors and all who were present for what they had done for their own University.

THE DIAGNOSIS AND TREATMENT OF SCIATICA AND MORBUS COXÆ SENILIS.

Professor Karl Petrén of Upsala publishes a long article on the diagnosis and treatment of sciatica and allied conditions in the current number of the *Review of Neurology and Psychiatry*. It is based on unusually wide personal experience, and is replete with practical hints and suggestions. Professor Petrén considers that the majority of cases of sciatica are neuritic in nature, and that neuralgia is but a symptom of this neuritis. He calls special attention, however, to a large group of cases essentially different in symptomatology from the usual type of sciatica. In this type tenderness is found, not over the nerve at all, even at its point of exit from the pelvis, but over the gluteus medius, somewhat low down, towards the border of the gluteus maximus. An abnormal resistance is frequently found when this region is palpated. In these cases Professor Petrén postulates either a myositis of the gluteus medius and pyriformis, giving rise to pressure on the sciatic nerve, or a neuritis of the superior gluteal nerve, in which case the resistance to palpation must be considered a localised muscular defence. It is his experience that true sciatica is amenable to treatment and eminently curable. He recommends rest in bed and large doses of aspirin, commencing with 90 grains a day, as a rule. For the physical treatment of the disease massage is much the most important method. It may be employed with the greatest benefit in acute as well as subacute sciatica. In the gluteus medius cases massage is necessary only over the tender area. Cautious nerve stretching is also advocated by the writer, the best and simplest method being to place the patient on his back, then to raise his leg with the knee straight until a moderate degree of pain is felt along the sciatic nerve, and this should be repeated daily, when improvement rapidly ensues. Professor Petrén asserts confidently that primary sciatica is not a chronic affection, and that an attack of sciatica properly treated probably will not last more than a year. If, therefore, the practitioner is confronted with a case of "chronic sciatica," it follows that he should examine carefully the condition of the hip-joint, when he may find rheumatoid arthritis of the hip in its initial stage. The differential diagnosis of the two conditions ought not to be too difficult. In sciatica pain on flexing the hip with extended knee with normal mobility of the hip-joint during flexion of the knee is present; in hip-joint disease there is limitation of movement to a greater or less degree. A severe sciatica, however, may cause pain on larger movements of the hip-joint, though the knee is flexed. The nature of the spontaneous pain does not help much, although in hip-disease it does not usually extend further than the knee. In the latter, also, the pain is most severe when the patient starts walking, and becomes less as he continues. This is not the case in sciatica. In coxitis it is often the stepping on the foot that is painful, whereas in sciatica, at least in the more severe cases, every phase of movement of the leg causes pain. Morbus coxæ senilis shows as a rule a steadily progressive course. For its treatment baths of various sorts, massage, and in particular energetic passive movements of the hip-joint are strongly recommended; among these movements there is one to be avoided by the operator—viz., circumduction. If the hip-joint be nearly ankylosed, it is evident that but little can be done.

MEDICAL MEN AND THE CLERGY IN RELATION TO "CHRISTIAN SCIENCE."

WE have received a letter from Mr. Frederick Dixon, dated from the "Office of the Christian Science Committee on Publication for the Counties in which London is situated," Surrey-street, Strand, in which he takes exception to a report in our last week's issue of a speech by Mr. Stephen Paget dealing with the attitude of medical men towards the clergy in their mutual relations to "Christian Science." Mr. Dixon appeals to our sense of fair-play to publish his letter, and if our readers can find in that document the faintest trace of an argument throwing any favourable light on his cause we are happy to give him this opportunity to defend it. But we can find no such trace. Mr. Dixon merely gets cross with Mr. Paget, whom he accuses of "developing a campaign of unashamed persecution." This refers to Mr. Paget's recipe of ridicule as a cure for the preposterous curative pretensions of those in high places. Mr. Dixon further states that there are hundreds of "Christian Scientists" as cultivated and as intelligent as Mr. Paget. We are unable to concede either a full measure of intelligence to any person who persistently and wilfully denies the plain facts of existence or a fair share of culture to one who rejects the resources of civilised medicine in the treatment of disease and prefers to rely upon magical practices. Mr. Dixon tells us that Mr. Paget proposes that "Christian Scientists" "should be practically hounded into recantation," and adds, "If Christian Science is fatuous nonsense there is not the remotest chance of its ever being more than a fleeting cloud across the horizon." Happy Mr. Frederick Dixon! Does "Christian Science" in truth endow its disciples with such trustful faith in the communal intelligence of the human race? We make bold to say that "fatuous nonsense" of different kind and degree has bulked larger than the choicest wisdom of the age in the imagination of mankind in all times, and we see no reason to speak differently of the present day. It is always the sham science and the clap-trap philosophy that appeal to the masses, and we agree with Mr. Paget that these are the foundations of "Christian Science." We should add that Mr. Dixon assures

us that his "Church" has no quarrel with the medical profession, for which it has the utmost admiration, although differing completely from the methods that it advocates. We fear that an intelligent profession cannot return the compliment, for the pretensions of "Christian Science" are of proved danger to the public welfare and of a nature which can only excite hostility in scientific minds.

MEDICINE AND ALCOHOL DUTY.

THERE ought to be some way out of the difficulty in excluding alcohol used for medicinal purposes from the extra duty (or from duty at all) which is amongst the fresh proposals contained in the recent Budget. Surely alcohol which is used for making tinctures or chloroform cannot be classed as a luxury. The tax becomes a tax on drugs, and any substance that is accepted as affording relief to suffering humanity should be as free as possible from the drawback of expense. We learn that the increased duty of 3*s.* 9*d.* per proof gallon of spirit means an increased expenditure of hundreds of pounds to our hospitals for chloroform alone, apart altogether from the necessarily advanced price of tinctures. Suggestions have been made to give preference to chloroform made from acetone, and to employ glycerine in the place of alcohol for making extracts. The British Pharmacopœia, however, must be reckoned with, for so many of the official preparations include (nay, insist upon) alcohol in the making, while suspicion has more than once been cast upon the suitability of chloroform made from anything but pure alcohol for anæsthetic purposes. The avoidance of the tax by a method of substitution is therefore calculated to aim a blow at pharmacological standards which is most undesirable, having regard to the care and skill which have been devoted to their setting-up, and to the fact that the physiological action of substituted preparations has not been so accurately outlined. The position imposed upon medicine by the Budget proposals in regard to the increased duty on alcohol is a very serious one, and the question cannot be regarded as dependent only on fiscal considerations. The Chancellor has been guided by humanitarian reasons in regard to moderating the tax on motor-cars in the case of medical men, and the same reasons should guide him to a workable scheme by which alcohol in humanitarian service should be exempt from fiscal duty.

INDURATIVE HEADACHE.

THE condition which is familiar to the German practitioner as *Schwielenkopfschmerz* does not appear to be equally well known in this country, if we are to judge by the paucity of references to it in text-books. Yet, according to Edinger, of all forms of headache due to organic disease it is probably the most frequent. Its symptomatology is so unique that there should not be any difficulty in differentiating it from other varieties of cephalodynia, neuralgia, migraine, and so on. Examination shows that at the insertions or within the bodies of the muscles of the head and neck there appears a thickening, a little nodule of varying size and consistence, which at first comes and goes with the paroxysms of headache, but later becomes chronic, with an area of chronic myositis round it, and so remains as a permanent irritative focus. These nodules may be multiple: their most common sites are in the temporal muscles, the occipito-frontales, the sterno-mastoids, the upper trapezii and other of the posterior muscles of the neck. In the early stages of the disease, when the headache is severe, they are easily palpable as soft yielding swellings, sometimes not more than a slight local puffiness of the muscle, but once they become chronic they can always be detected as little indurated areas of resistance, though the patient may be for the time free from pain. In a recent number of the *Journal of the American Medical Association* Dr. N. S. Yawger of the University of Pennsylvania Hospital has directed attention to this little recognised condition and quotes three cases. He suggests that all cases of headache should be examined by forcible twisting and straining of the neck, which may bring out pain at the insertion or along the bodies of the neck muscles. Moderately firm pressure over the scalp will often serve to detect these local thickenings, which may be very hypersensitive; sometimes similar sensitive points are placed over the spinous processes of the cervical vertebræ, particularly the transverse processes of the upper ones. That indurative headache is of gouty origin is probable, although the pathological chemistry of the condition is far from being satisfactorily defined. Treatment by massage is often very efficacious, coupled with certain drugs that are almost specifics, notably salophen.

EPITHELIOMA OF THE ŒSOPHAGUS TREATED BY RADIUM.

AT a meeting of the Société Médicale des Hôpitaux of Paris on April 2nd M. Guisez and M. Barcat reported good results from the treatment of epithelioma of the œsophagus by radium. We published a short note on the subject from our Paris correspondent,[1] but the complete paper, which is now before us, is worthy of more extended notice, and forms an interesting pendant to the account of Dr. Louis Wickham's recent address on Radium Therapeutics before the Dermatological Section of the Royal Society of Medicine, a summary of which we print on another page. Epithelioma of the œsophagus is composed of stratified pavement epithelium and resembles closely in structure epithelioma of the skin. The good results which have been obtained from treating the latter with radium led M. Guisez and M. Barcat to try the direct application of radium in epithelioma of the œsophagus. In all the cases the diagnosis was made by œsophagoscopy, which showed epitheliomatous lesions, either nodular or infiltrating, and was confirmed by microscopic examination of a fragment of the growth. Œsophagoscopy enabled the exact site of the tumour to be ascertained. A sound, olive-shaped or cylindrical, according to the nature of the case, carrying a tube containing radium, surrounded by two screens of silver four-tenths of a millimetre in diameter, was introduced. At the first sitting 1 centigramme of radium was used and was left in place two or three hours. In the following sittings a tube containing 5 centigrammes was used and left in place from three to six hours. By this method the highly penetrating rays of Dominici were used—i.e., that is the rays which persist after the interposition of a screen of dense metal (lead, gold, silver, &c.). These rays have a powerful electric action on epithelial neoplasms, in which they provoke histolysis and within wide limits do not injure normal tissues. They are therefore particularly indicated in œsophageal tumours, in which it is important to avoid any erosion of the mucous membrane which would give rise to dysphagia. Three cases were reported, of which the following is an example. A man, aged 45 years, was seen in November last for progressive dysphagia, wasting, and cachexia. Œsophagoscopy showed in the middle third of the œsophagus on the left side a budding, infiltrating tumour with all the characters of an epithelioma. By means of dilatation carefully performed with soft bougies the œsophagus was kept permeable and the patient could take food during November and December, but during January he became weaker and weaker and in the latter weeks only a filiform bougie could be passed. On March 2nd a centigramme of pure bromide of radium on a No. 16 sound was introduced with difficulty into the orifice of

[1] THE LANCET, April 24th, 1909, p. 1214.

the stricture. The sound could not be passed beyond this point and was fixed in this position for two hours by a cord passed round the neck. When the sound was removed it was found covered with a reddish fœtid liquid, and during the whole period of its application there was a flow of purulent saliva with a gangrenous odour. On the following days the dysphagia was slightly diminished, and the patient could swallow liquid more easily. On March 9th 5 centigrammes of radium were introduced on a No. 22 sound. The œsophagus was much more permeable and the sound was passed without difficulty and left in position for five hours. Every hour the tube, which had sunk a little below the tumour, was elevated half a centimetre by withdrawing the sound. When removed it was covered with the same kind of fluid as before. On the following days the dysphagia seemed to be worse, but the general condition was better. On March 16th another application similar to the last was made. The sound passed much more easily. There was an abundant flow of frothy but not fœtid saliva, and when the sound was withdrawn it had not the gangrenous odour previously observed. On the following days the dysphagia varied, being marked on some days and much less on others. On the 20th œsophagoscopy showed that the tumour was much smaller and that its surface instead of being nodular and sanious was smooth. A fourth application was made. As the dysphagia persisted it was decided to feed the patient by the stomach tube which was easily passed. A fifth application of radium was made on the 24th and a sixth and last on April 1st. On this date a No. 30 bougie was easily passed and a growth could no longer be seen. The persistence of the dysphagia was attributed to congestion and spasm of the œsophagus produced by the application of the radium. Histological examination showed that the growth was an epithelioma composed of stratified pavement epithelium with "epidermic globes." Similar results were obtained in the other cases. Though it cannot yet be said whether the patients have been cured the relief obtained marks the treatment as valuable.

THE "POLYCLINIC" DINNER: PRESENTATION TO CAPTAIN HAYWARD PINCH.

THE tenth annual dinner of the Medical Graduates' College and Polyclinic, which was held at the Trocadéro Restaurant on May 24th under the chairmanship of Professor Howard Marsh, was made particularly interesting by the presentation of an illuminated address and a cheque for 100 guineas to Captain A. E. Hayward Pinch, I.M.S., on his retirement from the post of medical superintendent to the Polyclinic, to take up the directorship of the British Radium Institute. The address, which was signed by some 150 members of the Polyclinic, recorded the warm appreciation which Captain Pinch's teaching and administrative abilities had won for him at the College in Chenies-street. About the same number of ladies and gentlemen sat down to dinner. The Chairman, in proposing "The Medical Graduates' College and Polyclinic," drew a scholarly comparison between the work of the artist, the craftsman, the mechanic, and the medical man, showing why he considered that skilful medical practice was amongst the most difficult and arduous work followed by mankind. He extolled both the general practitioner, who must have all knowledge at his fingers' ends, and the Polyclinic, which was the first institution of the kind in London to help him to that possession. There was no flaw in the teaching and consultative arrangements at the Polyclinic, which was an agency of the greatest importance to the public. If the public were told about the work it was doing it would surely be ready to bear some of the cost. He considered the College to be a "charitable institution founded on the soundest possible lines." The toast was responded to by Sir Jonathan Hutchinson and Dr. C. Theodore Williams, and was followed by the toast of "Captain Hayward Pinch," given by Dr. C. O. Hawthorne, who gave an account of the multifarious duties required by the Polyclinic of its medical superintendent and of the uniform tact and distinction with which Captain Pinch had discharged them. In the course of his speech Dr. Williams read the text of the illuminated address which was subsequently handed to its recipient, who acknowledged the gift in feeling terms. Dr. J. Dundas Grant proposed and Sir William S. Church responded to the toast of "The Guests," and Sir Donald MacAlister paid the final tribute to "The Chairman," whom he hailed in his double magistral capacity, first as his own honoured Master in Surgery and then as Master of Downing. Amongst the company whose names we have not already mentioned were Sir Alfred Keogh, Dr. Arthur Newsholme, Mr. and Mrs. J. Bland-Sutton, Mrs. Hayward Pinch, Mrs. Theodore Williams, Dr. and Mrs. Theodore Thomson, Mr. Mayo Collier, Mr. J. Cantlie, Dr. A. J. Whiting, Mr. and Mrs. Ernest Clarke, Dr. William Hill, Colonel D. Wardrop, Dr. W. Ewart, Mr. C. Choyce, Dr. J. E. Squire, Dr. Harry Campbell, Dr. and Mrs. Douglas Cree, Dr. Scanes Spicer, Dr. T. N. Kelynack, and Mr. and Mrs. Sydney Grundy. We must mention a neat impromptu ditty concerned with one "Polly Clinic," and introduced by Mr. Harrison Hill into a musical entertainment with which he considerably enlivened the evening.

THE AUSTRALIAN INSTITUTE OF TROPICAL MEDICINE: THE POSITION OF DIRECTOR.

As will be seen by our advertisement columns, the committee of the Australian Institute of Tropical Medicine has invited applications for the post of director of the new Institute of Tropical Medicine, which will have its situation in Townsville, Queensland. Applications for the appointment must be in writing and, accompanied by testimonials, should be addressed to Dr. C. J. Martin, F.R.S., director of the Lister Institute of Preventive Medicine, Chelsea Gardens, London, S.W., and must reach their destination not later than July 10th, 1909. Applicants are requested to submit six copies of their application and testimonials. Full information regarding the proposed institute, and the conditions of appointment for the directorship, may be obtained from Dr. Martin, but the following details with regard to the appointment will assist those who may be in a position to be likely candidates. The broad object of the institute is to further the scientific study of the diseases peculiar to tropical Australia and to afford opportunities for the training of medical men in this department of medicine. In Townsville, Queensland, where the institute will be situated, a large and well-equipped general hospital exists, the committee of which has undertaken (1) to set apart, free of charge, an isolated building in the grounds of the hospital for the work of investigation of the diseases in question; and (2) to maintain in the main wards of the hospital, also free of charge, patients under special observation who may be suffering from diseases other than those specially excluded by the provisions of the Queensland Health Act, and to give every facility for clinical observation to the officer in charge of the institute. The general control of the institute will be vested in a committee appointed by the Universities of Sydney, Melbourne, and Adelaide, and will include one representative of the Government of Queensland. The director will be required to devote his whole time to the institute, its organisation, its research and its tuition

work, and will not be allowed to engage in any other occupation unless by the consent of the committee. He will in the first instance hold office for five years at a salary of £600 per annum, to commence from the date of arrival in Australia, but if he is appointed from Europe £100 will be allowed for travelling expenses. The committee desires, if possible, that the director, who will be required to provide a medical certificate certifying to his physical fitness, should take up his appointment on Nov. 1st next.

THE PROPOSED PUTNEY HOSPITAL.

ON June 3rd a conjoint meeting of the Chelsea, Richmond, and Wandsworth divisions of the British Medical Association, and of all local practitioners who are not members of any one of the three divisions, is to be held at the Putney Constitutional Club. The object of the meeting is to consider a report of the South-West London Medical Committee, together with a scheme for the constitution and conduct of the proposed Putney Hospital, as also for the nomination and election of representatives of the local medical profession on to the council for the government of the hospital and on to any committee formed to prepare a constitution. It has already been agreed that the hospital should be only a small general hospital on cottage hospital lines and that there should be no out-patient department. The proposals to be considered at the forthcoming meeting contain amongst others provisions for a consulting staff, for a visiting staff who shall hold office for four years, and that every registered medical practitioner in the neighbourhood should have the opportunity of attending his own patients in the hospital if they so desire. The voting at the meeting of those medical men who are members of the three divisions of the British Medical Association and of the other medical men present who are not members will be taken separately.

THE PHARMACOLOGY OF APIOL.

IN a recent number of the *Bulletin des Sciences Pharmacologiques* M. L. Lutz and M. G. Oudin have described the pharmaceutical and pharmacological characters of the various preparations of apiol. They show that the toxicity is proportional to the volatility of the product. Omitting the green and yellow varieties from consideration as being too indefinite in composition, they give the toxic dose per kilogramme of body weight in guinea-pigs as follows: crystallised apiol, 0·5 gramme; and distilled apiol, 0·9 cubic centimetre. Myristicene obtained from nutmegs, which differs from crystallised apiol only in possessing one methoxyl group less, was found to give fatal results to guinea-pigs in doses of 2 cubic centimetres. These results tend to show that crystallised apiol is probably not the only active constituent of liquid apiol, in which it is present to the extent of not more than 6 per cent., otherwise the toxic dose of liquid apiol would be about 8·33 cubic centimetres. The phenomena preceding death are not identical in all cases. Animals, into which a fatal dose of crystallised apiol has been injected, usually die after a long period of convulsive spasms and tetanous contractions, while in the case of distilled apiol and the green and yellow varieties death follows weakness, collapse, and coma. It is evident, therefore, that the different commercial apiols possess very different pharmacological properties, and on this account it is desirable that a standard should be established for so powerful a substance. Apiol would appear to have two main uses in therapeutics. It may be used as an antispasmodic in the treatment of painful contractions of the uterus. For this purpose crystallised apiol is probably unsuitable owing to the tremor, agitation, and convulsions caused by its administration. The liquid preparations of apiol, on the other hand, are indicated in this condition owing to the weakness and depression following their employment. The other use to which apiol may be put is the promotion of the menstrual flow by vaso-dilation. This purpose is achieved by all the preparations of apiol, but not by myristicene. It may be remembered by readers of THE LANCET that, in our inquiry on abortifacients, apiol was found in certain of the pills and potions examined in our laboratory that were recommended for "removing irregularities."

A COMPLIMENTARY DINNER TO DR. TATHAM.

IT has been thought that the occasion of the retirement of Dr. J. F. W. Tatham from the position of Superintendent of Statistics in the General Register Office affords a fitting opportunity to his friends to show their appreciation of his services to public health by entertaining him at a dinner which it has been arranged should be held at the Grand Hotel, Charing Cross, on Thursday, June 17th, at 8 P.M. Sir Shirley Murphy has consented to preside, and a number of those who are associated with public health work have already intimated that it is their intention to be present. Dr. W. H. Hamer and Mr. Herbert Jones are acting as secretaries to the dinner committee, and the former will be glad to receive, at 55, Dartmouth-park-hill, N.W., the names of any of Dr. Tatham's friends who have not already communicated with him. The price of the dinner tickets is one guinea, inclusive of wine.

PLAGUE-INFECTED RATS AND UTILITARIAN "VIVISECTION."

WE have placed the term vivisection in inverted commas because in our view it is not properly applicable to the inoculation experiments which form the bulk of operations that are covered by the word "vivisection," and to which our remarks at the present moment will more particularly apply. The current annual report of Dr. Herbert Williams, the medical officer of health of the Port of London, tells us that in August of last year attention was drawn by the nuisance caused by their decomposition to some dead rats on one of the quays of the West India Dock, and as no poison had recently been laid down and there was no apparent cause for mortality amongst these rodents, one of them less decomposed than the others was submitted to Dr. Klein for examination. As a result, bacteria closely resembling the bacillus of plague were detected and some of the lung juice was injected into a small guinea-pig and into a mouse. A few days afterwards the guinea-pig developed a bubo in the groin, which on puncture yielded bi-polar stained bacilli, which in size and shape resembled the plague bacilli—a circumstance which led Dr. Klein to pronounce that the illness was "very suspicious of plague." Some of the fluid from this bubo was injected into another guinea-pig and agar plates and tubes were inoculated therewith. The second guinea-pig shortly became so ill that it was killed, and the necrotic tissue surrounding the bubo was found crowded with typical bacilli pestis, while the spleen was pervaded by minute necrotic nodules. The agar cultures developed colonies of the specific micro-organisms of plague, and Dr. Klein had no hesitation in stating that this second guinea-pig was affected with plague of sub-acute type, and therefore that the original guinea-pig had died from that disease. In the meantime a search had been made in all the basements and warehouses on the invaded quay, and 67 live and 208 dead rats were found. The dock company undertook a further search of the basements and warehouses, and among the rats found several which appeared to have died from plague, while 50 per cent. of those

examined by Dr. Klein showed evidence of bubonic or pneumonic plague. Except, therefore, for Dr. Klein's inoculation investigations this very important rat disease might have been overlooked, and transmission of plague from the rats to man might have occurred. Dr. Williams reports that this is the first time that plague has occurred amongst rats in the Port of London, and fortunately in this instance, although several persons were in contact with the rats none contracted the disease, notwithstanding the fact that one man developed a suspicious bubo in the cervical region. The sum total of animal suffering in this case, except, of course, for the very large number of rats which were apparently attacked with the disease in the ordinary way, was the inoculation of two guinea-pigs and one mouse with plague, coupled with the violent death of one of the former. But against these three inoculations has not improbably to be placed the saving of suffering, and perhaps lives, to a considerable number of rats which would possibly have contracted the disease had its spread not been prevented. It might, therefore, be reasonably entertained that even from the antivivisectionist standpoint in preventing the suffering of animals these "vivisections" were justified. But we are afraid that the mental attitude of the antivivisectionists will not allow them to admit this, although it seems a fair inference from the facts adduced. It is to be regretted that the antivivisectionist spoils his case by exaggeration. All of us have sympathy with animal suffering, and the antivivisectionist differs from his fellows only in the relative values of his sentimental and logical faculties. Every man worthy of the name deplores, as he regards the methods of nature, the amount of suffering which he sees around him, a feeling which appealed with great force to one famous man of science, who, when asked whether he believed in the existence of a God, replied, when adducing points on either side, that the strongest point against an all-powerful and beneficent being was, in his view, the amount of suffering in the world. The whole of the question of vivisection is one of relativity.

THE PHARMACEUTICAL SOCIETY.

A VERY successful and enjoyable evening was spent by the members and friends of the Pharmaceutical Society on the occasion of the annual dinner which was held in the Holborn Restaurant on May 18th. Mr. J. Rymer Young, President of the society, occupied the chair, and he was supported by Mr. Henry Morris, President of the Royal College of Surgeons of England, Viscount Hill, Sir Dyce Duckworth, Mr. Thomas Lough, M.P., Mr. R. A. Robinson, L.C.C., the Master of the Apothecaries' Society, Dr. W. H. Willcox, Dr. W. E. Dixon, Professor A. W. Crossley, Professor R. Meldola, F.R.S., and others. The toast of "The Houses of Parliament" gave Mr. R. A. Robinson an opportunity of referring to the recent efforts made to obtain amendments of the Poisons and Pharmacy Bill. He hoped that local authorities under the new Act would take into consideration the reasonable requirements of the public, and would refuse to multiply the facilities for the sale of poisons in localities where they were sufficient. It was quite wrong and wholly contrary to the spirit of the Act, he added, to grant poison licences where there were sufficient pharmacists to supply the demand and therefore where such licences were not needed. Viscount Hill, in replying on behalf of the House of Lords, also referred to the present Act, which empowered ordinary traders to sell certain poisons, and expressed the fear that the effect of granting so many licences would be disastrous to the community at large. Mr. Thomas Lough responded for the House of Commons, and in a really good and entertaining speech expressed his pleasure to be in the service of pharmacists and to be able to represent their case in the legislative chamber. The toast of the "Medical Profession," proposed by the chairman, was responded to by Sir Dyce Duckworth, who remarked that the relations between pharmacists and the medical profession had always been intimate. That relation had, however, been broken to some extent owing, he thought, to the introduction of a great many agents and drugs which had come into use from America, Germany, and other parts of the world, which tended in some degree to displace the knowledge and use of the remedies prescribed in the Pharmacopœia. He welcomed the fact that the higher education of pharmacists was making itself felt in all directions and was inspiring confidence in the public. In response to the toast of "The Pharmaceutical Society" the chairman alluded to the prosperity of that body, and said that the list of members and student associates was something like 8000, a higher figure than had ever been known since the society was formed in 1841. As regards the new title which had been given to chemists, he urged that it should be used in such a manner as would tend to uplift the calling of pharmacy and make pharmacists become more recognised as an educated and skilled body.

THE INTRA-ABDOMINAL USE OF OXYGEN.

THE intra-abdominal injection of oxygen for the treatment of tuberculous peritonitis was tried two years ago in Germany by Dr. Schulze. He tapped the fluid and then injected oxygen intraperitoneally until the distension by gas corresponded with the previous distension by fluid. He found that, with little or no intestinal disturbance, the gas was absorbed within eight days, and that with it disappears the tuberculous fluid. Dr. H. D. Meeker in the *New York Medical Journal* of April 10th publishes an interesting series of cases, and a still more interesting series of experiments on animals, which go far to prove the therapeutic value of the method. In the case of human patients Dr. Meeker first incises and evacuates the fluid in the ordinary way and closes the abdomen, leaving only a small aperture in the lower end of the peritoneal opening with a purse-string suture in position, through which a glass cannula is introduced. Warmed oxygen (100° F.) is passed in until the liver dulness is just obliterated, previous exploration having shown that there is no adhesion between the liver and the abdominal wall. The pressure of the oxygen must not exceed, and should not approach, 1800 millimetres of water. After sufficient oxygen has passed, the tube is withdrawn, the purse-string suture being simultaneously pulled tight and tied, and the succeeding layers sutured. The immediate effects are an improvement in colour, a slowing and strengthening of the pulse, and very rapid recovery from the anæsthetic. Post-operative discomfort is, if anything, rather lessened, though the converse might be expected. On the absorption of the oxygen—i.e., any time after 24 hours—there was some tendency for shock symptoms to return in severe cases. The eventual effect was in all cases good, and it is suggested that the method tends to check the formation of adhesions, which appears possible. Dr. Meeker has seen no harmful results in any case, but is impressed by the promise of the method as a remedy both for tuberculous peritonitis and for shock in other abdominal conditions. Dr. Meeker, in summarising his conclusions on the results of the interesting series of animal experiments, states that he finds that all reactions are more prompt when the oxygen is warmed, that oxygen is completely absorbed in from 18 to 72 hours, that it is a slight respiratory and cardiac stimulant, but has little effect on blood pressure when the pressure of the gas is moderate. It tends to lighten deep anæsthesia and hasten recovery after the dis continuance of anæsthesia. A pressure of more than 1800

millimetres of water may cause collapse. Oxygen tends to prevent the formation of adhesions more effectively than any inert gas. It quickly changes a dark blood to scarlet in cases of anoxæmia. It stimulates peristalsis, but does not irritate the visceral peritoneum. Dr. Meeker reports five human cases in full, all of which made good recoveries. Of Dr. Schulze's seven cases, six were still at their ordinary work 18 months afterwards.

THE TRUE TEMPERANCE ASSOCIATION.

Lord Halsbury outlined the methods advocated by the True Temperance Association when presiding at its inaugural meeting on May 21st at Caxton Hall, Westminster. Its central aim is to make the public-house into a reasonable place of recreation and refreshment, and it urges justices to encourage publicans to make their houses attractive so that they may be not merely drinking-shops but recreative clubs for working-men. Such public clubs would be under proper supervision, which cannot be said of the large number of reputed clubs that usually spring up wherever several public-houses are closed. Sir Alfred Cripps, who moved, and Lord Salisbury, who seconded the resolution formally founding the association, spoke in the same vein. We shall watch the career of this association with interest as we feel that its objects are sound. The objects of the association are so much in keeping with the principles which for eight years have been put into practice by the Public House Trust Association with increasing success, that a union of the two bodies at once suggests itself. It is true they attack the same problem in different ways. The older body works by replacing individual publicans by its own central and enlightened ownership of numerous licensed premises in which the old spirit of the inn is being revived, as we described in THE LANCET of May 18th, 1907, and in other issues. The new association aims at educating the publicans themselves and at rousing public interest in the improvement of public-houses. But the two methods are by no means incompatible. The Trust Association can only acquire new houses by degrees, and the "True Temperance" apostles would prove very useful messengers to prepare the way before it. In widespread movements of national importance coördinated effort has obvious advantages over that of separate agencies in administration and effective action. In other words, union is not only strength but also economy.

GONOCOCCAL MYOSITIS.

IN the *Archives de Médecine Expérimentale* Professor Chauffard and Dr. Fiessinger have reported recently a case of gonococcal myositis which presents features of interest. On the twenty-second day after the appearance of urethritis the patient, a young man aged 20 years, felt pain localised to the middle of his left upper arm, with swelling and redness of the skin. Two days later the normal outline of the biceps had given place to a prominence running into the axilla. Pressure on the muscle produced exquisite pain; its substance was of a wooden hardness, and complete extension of the forearm was impossible. As the condition steadily increased the patient was operated on under local cocaine anæsthesia. A longitudinal incision was made at the inner edge of the biceps, which was found to be very obviously inflamed, though not changed in colour. It was punctured in various directions without any pus being struck, but on the needle penetrating the cellular tissue between the biceps and the brachialis anticus a turbid yellowish fluid at once filled the syringe. Three or four spoonfuls of this fluid were obtained from an exploration of the space behind the biceps, and in tubes with suitable media four days later a pure and abundant growth of gonococcus was obtained from it. The patient's convalescence was uneventful. This is an instance of a relatively benign myositis—a hard and painful non-suppurative swelling of a muscle—evolved by contact with a gonococcal cellulitis. Such cases are rare; multiple muscular abscesses are more frequent. It is the musculature of the limbs which is commonly affected; in the arm perhaps the deltoid, pectorals, and extensors of the fingers suffer most often. This secondary myositis usually makes its appearance about the third week of the disease. With a view to elucidate the question whether suppurative myositis is associated with the presence of the gonococcus itself, and benign myositis with the gonotoxin only, Professor Chauffard and Dr. Fiessinger made some investigations by means of intramuscular injections of gonococcus cultures, gonotoxin, staphylococcus cultures, and isotonic solutions of sodium chloride into rabbits. They found that a double action took place, on the muscle parenchyma and on the interstitial tissue; while both gonococcus solution and gonotoxin acted on these two parts of the muscle, the action of the latter on the interstitial tissue was exceedingly slight, almost negligible, compared with that of the former. The gonotoxin by itself produced merely a coagulation of myosin, superficial and benign changes the clinical expression of which is muscular rigidity; whereas the gonococcus, acting as well by the secretion of gonotoxin, rapidly produced a fermentative pyogenic destruction. The result of the action of the gonococcus on the muscles cannot be distinguished by any specific histological characters from that of the staphylococcus.

THE PASTEUR INSTITUTE OF INDIA.

WE have received the seventh annual report of the committee of this institute, together with the report of the director of the institute at Kasauli. The report deals with the period Jan. 1st to Dec. 31st, 1907, and the total number of patients treated was 1349. Of these, 433 were Europeans and 916 were natives, and in addition to the 1349 persons who were treated 69 persons applied for advice. It is satisfactory to note that there is apparently no prejudice in any section of the community against antirabic inoculation. The method of preparing the vaccine now used is that introduced by the late Professor Höyges of Budapest. This differs from the original method used by Pasteur, in that, instead of the use of a vaccine derived from a dried cord, emulsions prepared from fresh cords are used. These can be diluted to any strength, and the advantages over the old method consist in simplicity of preparation, accuracy of dosage (under the old system uniformity of drying was almost impossible), and lessened disturbance of the patient. Under the old system a large quantity of foreign nerve matter had to be inoculated which often gave rise to unfortunate symptoms. Under the new, the amount of foreign nerve substance injected is reduced to a minimum. The percentage of failures among the 916 native patients was 0·44, not including those who died either while undergoing treatment or within 14 days of the completion of the treatment. The patients who died after a period of 14 days from the completion of the treatment, and so are reckoned "failures," numbered six. The patients who died during treatment or within 14 days of its completion numbered 12. Of the various animals inflicting the bites dogs numbered 1174, jackals 123, foxes 16, and cats 11. The dilution method from the fresh cord was not used throughout the whole year, but its results compare favourably with the dried cord method. By this latter method 581 patients were treated, with five failures. By the dilution of fresh cord method 768 patients were treated, with one failure. Altogether we must congratulate the institute and its

director, Major George Lamb, I.M.S., upon the work of the year. It is hoped that a further memoir upon rabies will be soon published.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies states that 3 cases of plague with 3 deaths were reported during the week ending May 21st. For many months weekly despatches received at the Colonial Office from Brisbane have reported that town free from plague. Some hundreds of rats and mice have been examined weekly but none have been found infected with plague since Sept. 15th, 1908. One infected rat was found at Machay six weeks ago. A telegram from the Governor of Hong-Kong to the Secretary of State for the Colonies states that 13 cases of plague with 11 deaths were reported during the week ending May 23rd.

WE may remind our readers that the exhibition of the National Association for the Prevention of Consumption and other Forms of Tuberculosis will be opened on Wednesday, June 2nd, at the Art Gallery, Whitechapel at 3 P.M., by the President of the Local Government Board.

WE regret to announce the death of Dr. William W. Ireland, which occurred on May 17th at Musselburgh in his seventy-seventh year. We hope to publish a note of his distinguished career as alienist and author in our next issue.

SMALL-POX AS IT AFFECTS LONDON: RETROSPECT AND FORECAST.

BY A. F. CAMERON, A.M. ST. AND., M.D., C.M. EDIN., D.P.H. CAMB.

AMONG the infectious diseases which are apt to prevail in London there is perhaps none in which the study of its epidemic cycle appears to yield more definite information to the epidemiologist than in small-pox. The cyclical variation in the prevalence of the disease in the metropolis was noted by Dr. B. A. Whitelegge and other observers, but the important fact that the epidemic cycle of small-pox had increased in length was first pointed out by the medical superintendent of the metropolitan small-pox hospitals in the annual report of the Metropolitan Asylums Board for the year 1898. In that report Dr. T. F. Ricketts, writing in the beginning of 1899, when the hospital was empty, ventured to predict that a very considerable outbreak of small-pox would probably occur in London within three years of the time at which he wrote. The epidemic which began in the early autumn of 1901 and reached its height in the late spring of the following year formed a remarkable demonstration of the accuracy of his forecast.

Dr. Ricketts's prediction was based on a study of the behaviour of the disease in London during the preceding 15 years. Beginning from the epidemic year 1884, he showed that a remarkably steady decline in the prevalence of the disease had taken place throughout the five succeeding years, that an increase in prevalence had then appeared and had steadily augmented during four years until the apex of the wave was reached in the year 1893. Therefore, beginning with the year 1884, the epidemic cycle of small-pox appeared to have lengthened and to have assumed a nine years' period. It was this observation, associated with the fact that the five years of declining prevalence had been repeated from the year 1894 to the year 1898, that appeared to afford good reasons for presuming that in 1899 London was again entering on a period of increasing activity in small-pox.

The following table shows the figures on which these conclusions were based. For the purposes of this review it is continued down to the year 1907, giving the most recent figures available.

Year.	Number of small-pox cases admitted to hospital.	Year.	Number of small-pox cases admitted to hospital.
1884	6363	1896	190
1885	6164	1897	70
1886	99	1898	5
1887	56	1899	18
1888	63	1900	66
1889	5	1901	1743
1890	22	1902	7916
1891	63	1903	355
1892	325	1904	449
1893	2376	1905	53
1894	1117	1906	27
1895	941	1907	2

The figures given in the table are taken from the annual reports of the Metropolitan Asylums Board, and it is to be noted that they do not refer to notified disease but are corrected for error in diagnosis. They show clearly that the declining phase which occurred from 1884 to 1889, and again from 1893 to 1898, has been repeated from 1902 to 1907. It seems reasonable to assume that the rising phase will also recur.

There is one point of importance which must be noted in making deductions from a comparison between the current cycle and its predecessors. During the year 1908 only one case of small-pox was admitted to the metropolitan hospitals. London has therefore had the unprecedented experience of two years of almost complete freedom from the disease. The fact affords reasonable grounds for congratulation. It may foreshadow a further increase in the length of the cycle and the consequent postponement of the culminating epidemic. On the other hand, it is possible that this prolonged interval of quiescence may be followed by a more rapid epidemic diffusion than has been experienced in former periods. The speculation is an interesting one, and particularly so at the present time, when evidence is accumulating that seems to justify the expectation that small-pox in London is again entering on a period of renewed activity. Outbreaks of the disease have occurred in Bristol and in other provincial towns; and in London, after a period of complete immunity from attack extending over many months, cases have been notified during the last few weeks in widely separated districts.

Whether the cyclical prevalence of small-pox is the effect of cyclical variation in virulence, or depends more on the gradual accumulation of unprotected individuals in the community, seems impossible to determine. Possibly both conditions are operative. But the practical point to be noted in the present-day epidemiology of the disease is that at certain well-defined periods small-pox acquires an enhanced striking power. This increased power of attack, whether it be an attribute of the disease or of the community it attacks, tends to show itself not only in a greater capability of spreading, but also in an increased case severity, so that the rising wave of small-pox is associated with a high mortality, and conversely the occurrence of a severe type of disease seems to be good presumptive evidence of gathering epidemic power. Similarly, a decreasing case severity would seem to indicate that the culminating point has been reached, and that the wave is about to decline, since during this decline the more virulent types of attack become more and more rare.

An increasing capability of spreading and an increasing case severity were noted by Dr. Whitelegge in connexion with the epidemic period which culminated in the outburst of 1871. Dr. W. H. Hamer, in the Milroy Lectures of 1906, referring to the outbreak of 1901–02 and the subsequent decline of the small-pox wave, says:—

> A striking contrast is presented in London by the 1901–02 small-pox case mortalities of 34·6 and 10·3 per cent., and the 1903 small-pox with case mortalities of 5 and 0·29 per cent. in unvaccinated and vaccinated respectively.

It seems difficult, then, to escape from the view that, vaccination apart, there are no possible measures practicable in London which can be depended upon to prevent the spread of small-pox when its convenient season approaches. The disease continues to improve its grasp in spite of all attempts to loosen it. The same methods which appeared

to be entirely successful during the inter-epidemic period now seem of little avail.

The high degree of efficiency which preventive organisation in London has reached is evidence that no available measures are neglected in dealing with an outbreak of small-pox. But the experience of 1901–02 clearly shows that such efforts were unsuccessful in preventing the occurrence of an epidemic. Are the prospects of success better or worse now than they were in 1901? They are probably no better.

Let us consider what happened in that year. The evidence furnished by the annual report of the Metropolitan Asylums Board for 1901 is striking. The course of events showed very clearly the power which small-pox has of suddenly taking possession not only of a street or small area but of a large district. The disease within a very short time of its first appearance attacked almost every borough in the metropolitan area. For example, on Jan. 1st, 1901, one patient was under treatment in the hospital, and up to the end of June nine cases in all had been admitted. In July 14 appeared, in August 82, in September 167, in October 272, in November 438, and in December 761 were admitted to the hospitals.

Take the experience of one borough in 1901. No cases were admitted from the borough during the first seven months of the year, but in the last five months it supplied 240, beginning in August with the contribution of 42 cases, or one-half of the total number admitted during that month from all London.

The point may be emphasised in another way. In March and April, 1901, no case of small-pox occurred in London. In May one union sent cases, in June three, in July six, in August 14, and in September, when the outbreak was first acknowledged to be assuming epidemic proportions, 25 metropolitan unions out of a total of 32 were contributing cases. In 1901–02 the epidemic ran its course and abruptly declined, as its nature is, in the summer of the latter year.

It is clear from the above monthly returns that the spread of small-pox in London was hardly under control after the month of August, 1901. Can greater success be hoped for during the period of increasing power on which the disease has now probably entered? A comparison between the present condition of London and its condition at the beginning of the last epidemic period, in regard to certain of the factors on which the spread of small-pox depends, would seem to indicate that the outbreak of the disease which is probable during the next few years may spread more rapidly and pass more quickly beyond control than was the case in 1901. Among these factors the state of the population in regard to vaccination and revaccination holds the leading place.

(*a*) *Primary vaccination.*—In the report of the Public Health Committee of the London County Council for 1907 Sir Shirley F. Murphy, dealing with London's vaccination returns, makes the following comments:—

> In respect of vaccination London compares unfavourably with the provinces, and has, indeed, done so for many years. ..... These figures afford reason for thinking that in 1905 there were over 100,000 unvaccinated children under five years of age in London. The existence of so large a proportion of unvaccinated children in London is necessarily always a standing danger, although considerable intervals of time may elapse without actual injury resulting.

It is unlikely that the state of the population in respect of vaccination has undergone any radical change since the year to which Sir Shirley Murphy refers. But we have now to face the fact that the relaxation of our vaccination laws during recent years has probably not tended towards a more efficient protection of the community.

(*b*) *Revaccination.*—The importance of revaccination has never been popularly recognised in this country, so that with the exception of the local results which follow the occurrence of an outbreak of small-pox the operation among the general population is unusual. It has never held any legal position. The belief that vaccination in infancy will protect from small-pox for the rest of life is still common among the people. As a result revaccination during the inter-epidemic period is practically non-existent, and even with the inclusion of the residuum of those who were revaccinated during the epidemic period of 1901–02 it is unlikely that the number of completely protected individuals forms more than a trifling minority of the London population. One is, therefore, probably justified in assuming that in respect of vaccination the population is not in a better position, but is less well prepared to meet an outbreak of small-pox than it was in 1901.

Another essential factor which holds a position of high importance in the successful sowing of epidemic small-pox in a community is freedom of communication. How does present-day London compare with the London of 1901–02 in this respect? In 1901 the electric tramway service was not begun. Now it is within easy reach of almost every district. In 1901 a motor omnibus was a rarity, and the underground railway system was insufficient and comparatively little used. The remarkable development in travel facilities which has been in progress since 1901 is affecting, not only the metropolitan area itself, but also the populous extra-metropolitan districts, by bringing the latter into closer communication with the parent community, as well as with each other. So great a change must have a considerable effect in promoting a small-pox invasion, and will almost certainly place a heavier handicap on those whose duty it is to cope with the disease than they have had to carry in the past.

That small-pox in London may or may not become epidemic during this year or during next year is not the important feature of the situation to-day. The points to be emphasised are (1) that experience indicates that the disease will almost certainly in the near future assert its increasing power and (2) that a comparison of present with former conditions makes it reasonable to suspect that the control of small-pox in London will present in the time to come a more difficult problem than it has presented in the past.

THE THERAPEUTIC APPLICATION OF RADIUM TO CANCEROUS AND OTHER TUMOURS.

DR. LOUIS WICKHAM'S ADDRESS BEFORE THE DERMATOLOGICAL SECTION OF THE ROYAL SOCIETY OF MEDICINE.

ON the afternoon of May 20th the hall of the Royal Society of Medicine, at 20, Hanover-square, was filled to its limits with a representative gathering of members of the Dermatological Section and Fellows of the Society assembled to listen to an address of exceptional interest from Dr. Louis Wickham, director of the Radium Institute of Paris, who had journeyed to London to communicate in person to British medical men some of the remarkable and encouraging results which have been obtained under his care by the therapeutic use of radium. It was to be expected that the city in which M. and Madame Curie made their profound discovery would have a long start of foreign centres in developing the applications of the newest element, but the excellence of the results which Dr. Wickham has already obtained with the radium, to the value of some 200,000 francs, with which the French Government is said to have stocked his institute, must have surprised a great number of his audience. Radium therapeutics may be said to be emerging from the experimental stage, and if their progress is to advance further in their recent ratio we must acknowledge that medicine has added a very considerable weapon to her armament against disease. The importance of Dr. Wickham's message lay in his carefully guarded but none the less confident announcement that in radium we have an effective and selective remedial agent for various forms of cancer. The public importance of this statement was doubtless the factor that led the council of the Dermatological Section to invite the Lord Mayor and Lady Mayoress of London to be present at its first authoritative utterance in this country, and though we are bound to plead for the utmost caution in applying too widely the lessons of a limited series of cases none of which have been under observation for many years, the more especially as Dr. Wickham gave no statistics of his successes and failures, we are constrained to think that the Chief Magistrate was shown good reason to carry away from the Royal Society of Medicine a message of hope to some at least of his suffering citizens. Dr. Wickham's statement of his case has certainly increased our eagerness to see the British Institute of Radium an accomplished fact.

Dr. H. RADCLIFFE CROCKER, President of the Dermatological Section, in opening the meeting, called upon the members of the section to honour the memory of the late

M. Besnier, a distinguished French dermatologist, by rising from their seats, a tribute which was duly paid.

Dr. LOUIS WICKHAM then, speaking in English, proceeded with his demonstration. The effect of radium on the tissues, he said, had been at first always associated with burning and destruction, and this was in fact its action on certain diseased tissues, as was shown clearly in such cases with superficial lesions as he would demonstrate to the meeting by lantern slides. There were then projected on the screen the first of a series of paired pictures representing patients with their lesions before and after radium treatment. The majority of these pictures were from plain or coloured photographs, though some were evidently produced by hand-drawn slides. In every pair exhibited the second picture ot the patient showed marked improvement; in some the lesion was replaced by a scar of smooth appearance, in others the tissues had been restored apparently to their healthy state. Dr. Wickham's first series represented cases of linear pigmented nævus on a boy's neck, of a pigmentary mole, of a large port-wine stain, and two of rodent ulcer, all on the patients' faces. The port-wine stain completely disfigured a girl's comely countenance, and a coloured photograph showed the result of treatment to have been a total disappearance of the stain and restoration of the good looks. All the other cases shown had been also apparently cured.

Dr. Wickham proceeded to claim that radium had a higher mission than destruction and that its action was specific in certain diseased conditions whilst not affecting normal tissues. There were four conditions in regard to which this specific action had been demonstrated—eczema, angioma, keloid, and cancer. Its application would in fact arrest such morbid processes as deep cancers without injuring the superficial tissues. But its successful application depended upon overcoming great difficulties in estimating accurately the dosage of the different kinds of rays suitable for each case. Dr. Wickham reminded his audience that the α rays given off by radium had little penetrative power and were easily absorbed; the β rays were divided into three sorts, the soft of low penetration, the middle, and the hard with penetrative powers approaching the powerful γ rays, which were the most penetrating of all. All the softer rays could be filtered off by screens of suitable material and density, and to the hard $\beta + \gamma$ rays remaining after this process the name of *rayonnements surpénétrants* was given. The action of these rays penetrated through several millimetres of lead or aluminium, as Dr. Wickham demonstrated to his audience, after darkening the hall, by showing them the lambent glow of a piece of radium thus screened. He then explained the manner in which the proportion of the several emanations may be altered in amount. Whereas naked radium gave off 90 per cent. of α, 9 per cent. of β, and 1 per cent. of γ rays, the varnish with which it was fixed in the apparatus for its therapeutic application altered this ratio to α 1, β 90, and γ 9 per cent. of the total rays. A lead screen filtered off all the α and most of the β, leaving 10 per cent. of hard β and 90 per cent. of γ rays. Turning to a diagram on which was shown a curve plotted by Baudouin, he explained that it showed graphically the variations in the sum total of rays penetrating lead screens of varied thickness. Along the abscissa were marked off the progressive thicknesses of these screens, whilst the divisions of the ordinate from above downwards represented the numerical strength of rays diminishing according to the interposition of the several screens. The curve showed a very rapid fall in total radial power at first, after which the line turned through nearly a right angle and ran almost parallel to the abscissa. This meant that all the α and most of the β rays were at once abstracted from the total activity by the interposition of screens less than a millimetre thick, but that the hard rays remaining showed their penetrative power to be almost as effective through two or three millimetres thickness of lead as through one millimetre. The soft α and β rays thus easily cut off were those that injured the skin, and it was for the hard lead-penetrating β and γ rays that Dr. Wickham claimed an elective power over cancerous tissues. He proceeded to describe briefly the appliances used to bring the radium in contact with the tissues. The radium salt was first melted with varnish and allowed to dry on the appliance like hard enamel, and this varnish was protected from the leaden screen by thin india-rubber tissue. The screen was shaped to the size of the radiant surface and covered with from 10 to 20 sheets of paper having an outer coat of indiarubber to stop the irritant "secondary radiations" caused by the passage of the rays through the lead. We had then at our disposal a means of separating rays harmful to diseased tissues though harmless to normal tissues. The softer rays which were filtered off on account of their irritant nature had also a curative effect, but we could dispense with this by bringing the much scantier hard rays to bear on the disease for a proportionately longer time, the estimation of which was the problem which had presented the greatest difficulty. It was found that 1000 units of the hard rays might be applied for three or four hours. They might have to be applied for eight or ten alternate nights to produce an effect. Another method of intensifying the effect which had proved of great value was known as the "cross-fire" (*feu croisé*). It consisted in the application to convenient tumours of two or more radium apparatuses on their different aspects so that cross streams of radiations bombarded them in various directions.

Dr. Wickham then showed his second series of slides, which represented the following cases. Lichenoid eczema, cured in nine doses of three minutes. Acne keloid of neck, cured with one year's treatment. Angioma of lower lip, greatly improved by "cross-fire" application on inner and outer surfaces. Large pulsating angioma of ear extending into submaxillary region, cured, with restoration of ear to normal size. Extensive angioma of baby's face, cured with six months' treatment; scars left were not unsightly. Rodent ulcer of temple, four stages shown, ending in cure. Epithelioma of ear, which had twice relapsed under x ray treatment; cured with radium so that its former site could not be located. Two cases of epithelioma near eye, both cured without retraction of lid. A large cancer of the cheek in a man forming a tumour six inches long, four inches broad, and three inches deep, with a crateriform ulcer at its apex. This ulcer was deep enough to allow of the insertion of a radium tube, which with the aid of three external radium appliances, each of 3000 units, placed around the circumference of the tumour, produced a very efficient "cross-fire" effect. These were kept on all night, their position being varied with each application. In a month this cumulative action had reduced the tumour to half the original size and had made it mobile, whereas it had been firmly fixed on the deeper tissues. Now three or four little lumps alone remain, for which the patient is still under treatment. A wax model of this cancer was also shown. Other slides projected on the screen demonstrated equally striking improvement in cases of epithelioma of the nostril and lip, and in one of extensive cancer of the cervical tissues secondary to epithelioma of the larynx. In this case, although the primary growth remained, probable asphyxiation had been averted by the great reduction in size of the massive cancerous glands. The "cross-fire" method was used, 16,000 units being applied behind the ears and under the chin. No effect had been produced for three months, and then a marked improvement had occurred.

Dr. Wickham then spoke of the radium treatment of visceral cancer, saying that though he had had encouraging results from the use of the *rayons surpénétrants*, his experience was not yet large enough to speak with authority on the subject, but in treating cancer of the breast he had used radium with remarkable success. He had summarised his experience in a separate short paper, which was read at his request by Dr. A. Whitfield, one of the secretaries of the Dermatological Section. This paper first described the case of a lady, too old to undergo surgical intervention, with a cancer in the left breast of the size of a Tangerine orange. The nipple was retracted and the neighbouring skin was ulcerated; hard glands could be felt in the axilla, and she suffered sharp thoracic pain. Dr. Triboulet treated her with radium, beginning in November, 1907. At the present time no trace remains of the tumour but a torpid nodule of fibrous consistency and freely mobile in the breast tissues. The skin is cicatrised, and the lady is in good health and free from pain. The rays were applied through a lead screen one and a quarter millimetres in thickness, covered with a thin rubber sheet. The results first obtained were very gradual, but subsequently the "cross-fire" device was used, a method for which the breast is well adapted, and progress became much quicker. In this way 2000 or 3000 units of the hard β and γ rays may be applied for three or four nights without damage to the integumental tissues. In another case of cancer *en cuirasse* under Dr. M. Martin's care four apparatuses were applied 15 times on alternate nights, making altogether nearly 180 hours of

exposure. A similar course was given after a month's interval. At the present time, five months later, the tumour is greatly diminished, the skin is mobile, and feels as though its morbid constituents had undergone fibroid retrogression. In another case a breast cancer diminished by two-thirds in three months. As an instance of a non-cancerous tumour influenced by radium, the case of a lady, aged 33 years, was quoted. Professor Berger had removed a cystic fibro-adenoma from her right breast in December, 1907. A year later a tumour of the size of a small orange, presenting similar clinical characteristics and giving rise to sharp pain, formed in the left breast. "Cross-fire" radium treatment reduced it in three months to a nodule which could not be identified in the breast substance. These cases prove the selective action of the *rayons surpénétrants* on deep-seated cancers.

Dr. Wickham summarised the advantages claimed for the radium treatment under the following heads, with the reservation that they were not of universal application. 1. The treatment can be applied without inconvenience to the patient in his or her daily occupation. 2. The interposition of lead screens renders the action of the rays on tumours slow and on healthy tissues harmless. 3. "Cross-fire" application compensates for the great diminution in radiations caused by lead filtration. 4. The radiations exert their special action at a depth. As regards cancer of the breast, radium can (1) cause its retrogression to such a degree as to bring about the appearance of a cure; (2) transform an inoperable into an operable cancer; (3) act on recurrences of small dimensions following on operations; (4) act on some cancerous lymphatic glands if not too extensively involved; (5) prolong life in incurable cases by relief of pain and checking of hæmorrhage and cancerous discharges; and (6) act as a prophylactic against recurrence after surgical intervention.

In conclusion, Dr. Wickham remarked on the *entente* between French and English chemists, such as the Curies and Ramsay, in the investigation of radium, and on the number of English visitors to his clinic in Paris. Commenting on the prospects opened by the projected British Radium Institute, he expressed a hope that its work would develop considerably the therapeutics of radium emanations in regard to their injection, ingestion, and inhalation.

Dr. Wickham then brought his instructive address to an end, and the prolonged and enthusiastic applause of the company forestalled as well as followed the chairman's expression of thanks which concluded the meeting.

THE SEVENTH INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY.

As was announced in THE LANCET of Feb. 27th, the opening proceedings of the Seventh International Congress of Applied Chemistry were arranged for Thursday, May 27th, and on that day, at the Royal Albert Hall, His Royal Highness the Prince of Wales formally declared the Congress open. The organisation committees have met with a remarkable response to their invitations to representatives of chemical science throughout the world to attend the meeting, and the programme of papers and subjects for discussion is a very heavy one. The attendance is expected to be at least 3000, including a number of delegates appointed by the Governments of all civilised countries. The sections and sub-sections are as follows:—I. Analytical Chemistry; II. Inorganic Chemistry and Allied Industries; III. (*a*) Metallurgy and Mining, (*b*) Explosives; IV. (*a*) Organic Chemistry and Allied Industries, (*b*) Physiological Chemistry and Pharmacology, (*c*) Colouring Matters and their application; V. Industry and Chemistry of Sugar; VI. (*a*) Starch Industry, (*b*) Fermentation; VII. Agricultural Chemistry; VIII. (*a*) Hygiene and Medicinal Chemistry, (*b*) Pharmaceutical Chemistry, (*c*) Bromatology; IX. Photochemistry—Photography; X. Electro-chemistry—Physical Chemistry; and XI. Law, Political Economy, and Legislation affecting Chemical Industry.

It will readily be conceded that this synopsis of subjects has reference to many matters of interest to medical men. We understand that questions affecting the administration of the laws in regard to the purity of food and related public health matters will receive considerable attention from several points of view. There will be present, for example, representatives of the legal profession who will give their opinion on the legal aspects of the present Food and Drugs Acts, analysts who amongst other matters will discuss the desirability or undesirability of standards, and then the views of traders will be interesting. The direction which legislation abroad has taken on these questions will also afford a theme for interesting discussion and consideration, and we learn that the United States Government has sent Dr. Wiley, who has been so intimately concerned in the organisation of recent legislative administration on the purity of food questions in that country, to take a share chiefly in the proceedings included in the sections of bromatology, analytical chemistry, and law. As to our authorities at home, each section appears to have gained the promise of support from leaders of every branch of chemical science if we may judge from the names of the numerous savants who have accepted official positions. When the enormously wide applications of chemical sciences to industry are considered, this will clearly mean a remarkably strong representation. It means, in fact, that the great iron trade will be represented, the starch, sugar, and alcohol industries, the fuel producers, the leaders of agricultural pursuits, the mining engineers, the cement and stone industry, the explosives manufacturer, all industries connected with the utilisation of waste products involving questions of agricultural economy, and the disposal of sewage by advanced methods. Then come the manufacturers concerned in the production of synthetic compounds, drugs, silk, camphor, rubber, wood, nitrates, and so forth. Altogether it is difficult to conceive of a congress which could have closer bearings upon the vital industries of the country than one which deals with chemical science in its application to them. The proceedings of the Seventh International Congress of Applied Chemistry in London will therefore be watched with interest, and it is fairly safe to predict that the result will be some developments which will attract widespread attention and which will be of importance to the community.

BRITISH MEDICAL BENEVOLENT FUND.

AT the May meeting of the committee 16 cases were considered and grants amounting to £150 made to 14 applicants, two cases being postponed for further inquiry. Appended is an abstract of the cases relieved:—

Daughter, aged 63 years, of late M.R.C.S. Was left quite unprovided for at father's death more than 30 years ago, and now with poor health and failing eyesight finds it impossible to support herself. Relieved twice, £24. Voted £12.

Wife, aged 48 years, of L.R.C.P. Edin. For several years past has been obliged to support herself on account of husband's whereabouts being unknown. Now asks for a little help towards the education of one of her daughters, aged 10 years. Voted £6.

L.F.P.S. Glasg., aged 75 years. Has practised for many years past in the South-West of England, but receipts have now dwindled to less than £1 a week. No children. Voted £12.

Widow, aged 37 years, of M.D. Dub. Quite unprovided for at husband's death six months ago and is at present incapable of earning a living owing to ill-health. One child, aged 12 years. Voted £10.

Daughter, aged 66 years, of late M.R.C.S., L.S.A. Has supported herself since the age of 17 years and helped younger members of the family, but is now obliged to give up a small school on account of ill-health. Slight help from a brother who can ill afford it. Voted £12.

Widow, aged 57 years, of L.R.C.P., L.R.C.S. Irel. Finds great difficulty in getting a suitable post and is temporarily given a home by a widowed sister who is herself partly dependent on her daughters. Relieved once, £5. Voted £5.

L.R.C.P., L.R.C.S. Edin., aged 49 years, who practised for several years as an assistant but had to have one eye enucleated and has nearly lost the sight in the other owing to iritis and glaucoma. No income; wife lets lodgings. Five children, aged 14 years to nine years. Relieved once, £18. Voted £18.

Widow, aged 56 years, of M.R.C.S. Eng., L.R.C.P. Edin. Since husband's death, more than 25 years ago, has maintained herself by cleaning offices, but now suffers from bronchitis and emphysema and is unable to continue such hard work. Relieved twice, £22. Voted £12.

Widow, aged 62 years, of L.R.C.P., L.R.C.S. Edin. Only income a small pension from a City company and has recently had many unavoidable expenses in consequence of a serious illness. Two sons only just self-supporting. Relieved twice, £12. Voted £10.

Widow, aged 48 years, of M.B., C.M. Edin. Practically unprovided for at husband's death 12 years ago, but with the help of friends and this Fund has been enabled to bring up a family of seven children, the eldest being now only 18 years. Relieved ten times, £114. Voted £12.

Daughter, aged 58 years, of late M.R.C.S., L.S.A. Was left a small competency but lost everything through the dishonesty of a friend. Relieved five times, £68. Voted £12.

Widow, aged 68 years, of M.D. Dub. No income; children unable to help; is dependent on this Fund and a little assistance given locally. Relieved five times, £40. Voted £12.

Daughter, aged 55 years, of late M.R.C.S. No income; lets lodgings

in the summer and does a little knitting. Health too poor to admit of regular occupation. Relieved five times, £60. Voted £12.

Daughter, aged 52 years, of late M.R.C.S. Slight uncertain help from relations. Is promised a light post as companion but requires suitable clothing. Relieved once, £5. Voted £5.

Contributions may be sent to the treasurer, Dr. Samuel West, 15, Wimpole-street, W.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.

THE annual general meeting of this society was held at 11, Chandos-street, Cavendish-square, London, W., on May 20th. In the absence of the President, Mr. J. Warrington Haward, the acting treasurer, took the chair. 20 members were present. The report presented showed that the society's invested funds amounted to £100,071, from which the sum of £3121 17*s.* 1*d.* was derived in interest during the past year, £645 being received in subscriptions and donations. During the past year the sum of £3017 was distributed amongst the annuitants of the charity—namely, 48 widows and 16 orphans, each widow receiving on an average £50, besides an additional £10 as a Christmas gift, and each orphan £12 and a gift of £3 at Christmas. During the year two widows in receipt of grants died. One, whose husband had paid in subscriptions £19 19*s.*, received £1500, the other, whose husband had paid in annual subscriptions £31 10*s.*, received £3300; she had been in receipt of grants since 1855. Two new widows were elected during the year, and on Dec. 31st there were 47 widows and 15 orphans in receipt of grants. One of the widows has been on the books since 1854 and has already received over £2200.

The report goes on to explain the Copeland Fund, a special fund which enables the society to grant to any widow or orphan, already in receipt of the society's ordinary relief, extraordinary assistance in special circumstances of unusual distress, such as blindness, paralysis, insanity, severe disabling accident, or grave permanent disease, and to continue such extra relief in the case of orphans for such further period as the court of directors may think fit.

The rest of the report sets out the constitution of the society and the advantages of membership. Relief is granted to the widows and orphans of deceased members who have paid their annual subscription for three years or who are life members. The directors wish strongly to urge upon the members of the medical profession, especially the younger, the desirability of joining the society. Membership is open to any registered practitioner who at the time of his election is resident within a 20-mile radius from Charing Cross, and should any member remove beyond the limits of the society he continues to be a member. The annual subscription is two guineas; every member who has paid this sum for 25 years becomes a member for life. Life membership may also be obtained by the payment of one sum, varying with the age of the applicant.

Further particulars and application forms may be obtained from the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, W.

THE TWELFTH INTERNATIONAL CONGRESS ON ALCOHOLISM.

THE Twelfth International Congress on Alcoholism is to be held in London at the Imperial Institute from July 18th to July 24th, under the Honorary Presidency of H.R.H. the Duke of Connaught. The object of the Congress is to consider the causation, prevention, and cure of alcoholism, both from their individual and their national aspects. The members of the Congress are to be received at the official reception on the opening night by His Majesty's First Commissioner of Works, the Right Honourable Lewis Harcourt, M.P. An exhibition of "accessories to temperance work" is to be held during the Congress, and the sittings of the Congress will be held in the conference room of the Imperial Institute, in Kensington Town Hall, and in the theatre of the Victoria and Albert Museum. The more purely medical aspects of temperance will be dealt with at a series of sectional meetings on the Tuesday, Wednesday, and Friday of Congress week. Among the distinguished foreign members who will contribute papers are: Professor Taav. Laitinen, M.D., Helsingfors, who in addition to his "Norman Kerr Lecture," delivered under the auspices of the Society for the Study of Inebriety, on "The Influence of Alcohol on Immunity," will make "A Further Contribution to the Study of the Influence of Alcohol on the Degeneration of Human Offspring," in continuation of his address at Stockholm in 1907. Dr. A. Holitscher, Karlsbad, will report on "Alcohol in Lobar Pneumonia and Enteric" and on "The Consumption of Alcohol in Hospitals and Asylums"; Dr. Legrain, Paris, will deal with "Alcohol and Insanity"; and Dr. Stein of Budapest with "Alcohol and the Nervous System." Among the subjects to be treated by British medical men are: "Alcohol and Temperance," by Professor G. Sims Woodhead, Cambridge; "The Action of Alcohol on Muscular and Mental Fatigue," by Dr. W. H. R. Rivers, Cambridge; "The Resistive Power of the Brain Against Alcohol," by Dr. T. S. Clouston, Edinburgh; and "The Effects of Alcohol on the Nervous System as Exhibited in Hospital and Asylum Practice," by Dr. F. W. Mott, London.

The treatment of the disease of alcoholism on its preventive as well as its remedial side will engage the attention of the Congress on the last two days. The legislative aspect will be presented by Alderman F. S. Spence of Toronto and Professor Jensen of Bergen, who will deal respectively with the "no licence" and the "management" methods, while the international question in regard to "native races" will be dealt with by Herr Victor of Bremen. These subjects will occupy the fifth general meeting and an afternoon session on the Friday, and on the Saturday at the sixth general meeting the "conclusion of the whole matter" from what may be called the Home Office point of view will be presented. "Alcoholism and Crime," by Lieutenant-Colonel A. B. McHardy, Edinburgh, chairman of the Prison Commissioners for Scotland; "Treatment of the Criminal Inebriate," by Professor G. Aschaffenburg of Cologne; and "Legislation for the Inebriate," by Dr. R. W. Branthwaite, H.M. Inspector under the Inebriate Acts, are the names of papers and readers.

Full information as to the meetings and other matters of interest will be published in the final programme in good time; meanwhile application for membership should be made at once to the Honorary Registrar, care of the National Temperance League, Paternoster House, London, E.C. The subscription for full privileges is 10*s.*; a contribution of half that sum entitles an "Associate" to receive a copy of the Congress Report and cards for the public engagements only. Donations to the necessarily heavy expenses will be duly acknowledged by Mr. J. S. Higham, M.P., chairman of the finance committee, if sent to him at 14, St. James's Court, Buckingham-gate, S.W., or to the account of the International Congress on Alcoholism at Messrs. Cocks, Biddulph, and Co., 43, Charing-cross, S.W.

MEDICINE AND THE LAW.

Unqualified Dentists.

THE decision of the Court of Appeal in the case of Bellerby *v.* Heyworth and Bourn, which is reported in the *Times* of May 22nd, is calculated to place the British Dental Association in a position of some difficulty. Last October a ruling was obtained in the case of Barnes *v.* Browne, heard in the King's Bench Division, which enabled war to be waged with renewed vigour against unqualified practice. In that case (which is reported in the January number of the *Law Reports*) the Lord Chief Justice, Mr. Justice Bigham, and Mr. Justice Walton decided that an unqualified person was properly convicted in the following circumstances. It appears that Barnes, who was not registered, carried on a dentist's practice at premises on the inner door and windows of which he exhibited his name and a notice as follows: "H. J. Barnes. Finest artificial teeth at moderate prices. Extractions, advice free. Hours 10–7. English and American teeth, advice free. Painless extractions." His room was fitted as a dentist's operating room. He was convicted by Mr. Plowden of having taken and used a description implying that he was specially qualified to practise dentistry. It was held that there was evidence upon

which the appellant could be convicted of an offence under s. 3 of the Act. Lord Alverstone said: "I come to the conclusion upon the statute itself that the words 'a person specially qualified to practise dentistry' include the case of a person having special personal qualifications to practise dentistry, and are not confined to the possession of a hall-mark or special qualification such as one of those mentioned in the Act." He also pointed out that the magistrate had read the words of the notice to mean that the appellant had special qualifications which enabled him to extract teeth without pain, and as that was a question of fact for the magistrate, the conviction was upheld. By the rules of procedure the case could not be taken to a higher court, and nothing occurred until last Friday to disturb the finality of the decision. It appeared that in February of this year three unqualified dentists entered into partnership. One of the articles provided that no partner should do anything calculated to infringe the Dentists Act. Two of the partners posted the following notice on the premises: "Bellerby, Heyworth, and Bourn. Finest artificial teeth. Painless extraction. Advice free. Mr. Heyworth attends here." On the authority of Barnes *v.* Browne (*supra*) Mr. Justice Parker held that this was a breach of the articles, and decreed a dissolution. On appeal the Master of the Rolls, Lord Justice Buckley, and Lord Justice Kennedy dissented from "Barnes *v.* Browne," and held that the above notice did not constitute an infringement of the Dentists Act, 1878, s. 3. The Master of the Rolls said: "To start with, it is not really disputed that there is nothing in the Act which prevents a man from doing dentist's work. It is not wrong under the Act for any man to do dentist's work, and it is not wrong for him to inform the public that he does that which it is lawful for him to do." His lordship then quoted from the decision of a Scotch judge, who had said (in another case) that "if the appellant can without any breach of the criminal law extract teeth and put in false teeth or the like I can see nothing in the statute forbidding him from announcing that he does so, which is just announcing that he practises dentistry." The appeal was therefore allowed. The higher court have thus held that the words "painless extraction" do not imply that the advertiser is possessed of a special qualification in the art which he practises. If this decision is upheld (and it can only be overruled by the House of Lords) it will be competent for every unqualified dentist to publish announcements with regard to the kind of work which is done at his consulting room. If the object of the Act is to protect the public there can be no doubt that it will be very largely frustrated. The decision, moreover, appears to have a considerable bearing on others upon which the registered dentists have placed reliance. Thus in a case which was decided in the King's Bench in 1904 the appellant, who was unregistered, was summoned for using an additional title, "German Dental Institute, West Central Dental Institute, Limited," implying that he had been registered under the Dentists Act, 1878, or that he was specially qualified to practise dentistry. It was held that he was rightly convicted. The Lord Chief Justice in that case said that these descriptions, if applied to an individual, would unquestionably be sufficient to indicate or to imply that he was a person specially qualified to practise dentistry. Finally, it appears to place the public in a worse position as regards unqualified dentists than they were in with regard to unqualified veterinary surgeons. For instance, it has been held that the description "canine specialist, dogs and cats treated for all diseases," was a breach of the Veterinary Surgeons Act, 1881, which prohibits the assumption of any name, title, addition, or description stating that a person is a practitioner of veterinary surgery or of any branch thereof, or is specially qualified to practise the same. One of the immediate consequences of the case under review will doubtless be to cause the withdrawal of many prosecutions which have been started in reliance upon the case which is overruled.

Nicolas v. *Atkinson.*

The question of costs in the recent libel action, brought by Mr. John Papa Nicolas against Dr. T. W. Atkinson, was argued before Mr. Justice Phillimore, on May 13th, with the result that Mr. Justice Phillimore deprived Mr. Nicolas of costs in respect of the verdict of one farthing damages which he had obtained against Dr. Atkinson, and allowed costs to Dr. Atkinson in respect of the verdict of 40*s.*, on the counter-claim, in Dr. Atkinson's favour, and in respect of the claim for slander which was dropped by the plaintiff. Mr. Lush, K.C., instructed by the solicitors of the London and Counties Medical Protection Society, appeared for the defendant, and Mr. F. E. Smith, K.C., for the plaintiff. Notice of appeal has since been given by Mr. Nicolas.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE ELECTION TO THE COUNCIL.

ON Thursday, July 1st, a meeting of the Fellows of the College will be held for the purpose of electing three members of the Council. The three members of Council who retire by rotation this year are Professor A. W. Mayo Robson, Sir William Watson Cheyne, Bart., C.B., and Mr. Richard Clement Lucas.

There are 24 members of Council and three of these retire each year. The following list gives the dates at which the several members will retire. In 1910: Mr. J. H. Morgan, Mr. H. H. Clutton, and Mr. C. B. Lockwood. In 1911: Mr. H. T. Butlin (first elected 1895), Mr. Clinton C. Dent, and Mr. G. H. Makins. In 1912: Mr. F. S. Eve (first elected 1904), Mr. A. A. Bowlby, and Mr. G. Barling. In 1913: Mr. Rickman J. Godlee (first elected 1897), Mr. Edmund Owen (first elected 1897), and Mr. C. H. Golding-Bird. In 1914: Mr. H. Morris (President; first elected 1893), Mr. F. Richardson Cross (first elected 1898), and Mr. G. A. Wright. In 1915: Mr. C. W. Mansell Moullin (first elected 1902), Mr. W. Bruce Clarke, and Mr. Charters J. Symonds. In 1916: Mr. A. Pearce Gould (first elected 1900), Mr. W. Arbuthnot Lane, and Mr. W. F. Haslam.

Of three members of Council retiring this year Mr. Mayo Robson was first elected in 1893 and Sir W. Watson Cheyne was first elected in 1897. Mr. Lucas has only served one term of office. The present Council contains representatives from the various medical schools as follows:—

St. Bartholomew's Hospital has	...	4	representatives
Guy's Hospital ,,	...	4	,,
St. Thomas's Hospital ,,	...	2	,,
London Hospital ,,	...	2	,,
Middlesex Hospital ,,	...	2	,,
Charing Cross Hospital ,,	...	1	representative.
King's College Hospital ,,	...	1	,,
St. George's Hospital ,,	...	1	,,
St. Mary's Hospital ,,	...	1	,,
University College Hospital ,,	...	1	,,
Provincial hospitals have	...	5	representatives.
		24	

Of the provincial hospitals Birmingham has two representatives, and Bristol, Manchester, and Leeds have one each.

Mr. Lucas and Mr. Harrison Cripps, who was unseated last year, are again to be candidates, and we understand that Mr. Walter H. H. Jessop also intends to go to the poll. Forms of the requisite notice from a candidate and of his nomination may be obtained on application to the secretary, and the same must be received by him duly filled up not later than Friday, June 4th. Fellows need not apply for voting papers, as they will be sent from the College to each Fellow whose address in the United Kingdom is registered at the College on June 15th.

Looking Back.

FROM

THE LANCET, *SATURDAY*, May 28th, 1831.

ANATOMICAL AND OBSTETRIC MACHINERY

AT the *Academie de Medecine*, on the 10th of May, an interesting report was read by M. Villeneuve on an obstetric machine invented by M. Ozenne, of singularly ingenious construction, which was exhibited in the anti-chamber. By means of air set in motion by bellows and pumps worked by handles, the contractions of the uterus, vagina, &c., determine the expulsion of a full-sized fœtus, and represent all the

events of parturition with surprising fidelity. M. Villeneuve gave his decided opinion, that this machine would be of the utmost utility to the obstetric student. M. Dubois, sen., concurred in this declaration, but qualified his remark by observing, that it is rather objectionable, because it expels the fœtus by the sinciput, instead of first presenting the occiput, and producing then the gradual change in the position of the head. M. Dubois dreaded that this defect might lead the pupil astray, and deceive him as to the natural phenomena, and the principles which should direct the application of the forceps. M. Deneux added that the machine gave an excellent idea of the inversion of the uterus also. On the whole, all the obstetric teachers present concurred in the opinion, that this ingenious piece of mechanism deserved to supersede all those at present in use.

At the same sitting M. Baffos read a very favourable report on the anatomical machines invented by M. Auzoux. The details of myology, angiology, neurology, and splanchnology, are therein correctly and beautifully exhibited. The inventor is daily increasing the perfection of his apparatus, the most recent of his improvements being the introduction of elastic ligaments, which permit the phenomena of luxations to be exactly studied. The reporter expressed his wish that all the establishments destined for the instruction of youth should procure this superb piece of mechanism, which presents almost all the advantages of anatomical study, while it is free from its disgusting accompaniments.*

Another mechanical construction was also brought before the notice of the Academy by M. Coudray. The machine is the invention of M. Touchard, of Augsburg, and is destined to supply assistance in surgical operations and in parturition. This machine, like the famous statue of the tyrant of Agrigentum, seizes the patient by all his limbs, and forces him to remain motionless, no matter to what operations he is subjected.—*Lanc. Franc.*

* The price of this valuable apparatus is, we understand, 120*l*.—ED. L

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8368 births and 4651 deaths were registered during the week ending May 22nd. The annual rate of mortality in these towns, which had steadily declined in the nine preceding weeks from 22·1 to 13·7 per 1000, rose again in the week under notice to 14·7. During the first seven weeks of the current quarter the death-rate in these towns averaged 15·3 per 1000; the rate in London during the same period did not exceed 14·8. The lowest recorded annual death-rates in these towns last week were 3·8 in Hornsey, 6·1 in Walthamstow, 6·4 in Rotherham, and 6·9 in Hastings; the rates in the other towns ranged upwards, however, to 21·5 in West Bromwich, 22·4 in Tynemouth, 23·4 in Coventry, and 28·9 in Wolverhampton. In London the recorded death-rate during the week did not exceed 14·0 per 1000. The 4651 deaths from all causes in the 76 towns last week showed an increase of 332 upon the low number in the previous week, and included 416 which were referred to the principal epidemic diseases, against numbers declining steadily in the six preceding weeks from 593 to 395; of these 416 deaths, 168 resulted from measles, 98 from whooping-cough, 51 from diphtheria, 42 from diarrhœa, 35 from scarlet fever, 20 from "fever" (principally enteric), and two from small-pox. The 416 deaths from these epidemic diseases in the week under notice were equal to an annual rate of 1·3 per 1000, against rates declining from 1·9 to 1·2 in the six preceding weeks. No death from any of these epidemic diseases was registered last week in Southampton, Northampton, Huddersfield, Rochdale, or in ten other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·0 in West Bromwich, 3·1 in Reading, 3·7 in Handsworth, and 7·5 in Wolverhampton. The fatal cases of measles in the 76 towns, which had steadily declined in the nine preceding weeks from 438 to 170, further fell last week to 168, but caused death-rates ranging upwards to 2·5 in Norwich, 2·6 in Coventry, 3·1 in Reading, and 6·5 in Wolverhampton. The 98 deaths from whooping-cough showed an increase of three upon the declining numbers in recent weeks; the highest death-rates from this disease being 1·2 in Tottenham, 1·3 in Preston, 1·5 in Smethwick, and 1·6 in Leyton. The 51 deaths referred to diphtheria exceeded the number in the previous week by 21, and included 17 in London and its surburban districts, six in Manchester and Salford, three in Liverpool, and six in Birmingham and its neighbouring urban districts. The 42 deaths attributed to diarrhœa showed an increase of four upon the number in the previous week. The 35 fatal cases of scarlet fever were fewer than in either of the two preceding weeks, but included five in Manchester and Salford, three in Liverpool, and two in West Bromwich. The 20 deaths referred to "fever" showed a further slight increase upon the low numbers in recent weeks; six were recorded in London and three both in Liverpool and in Manchester. Both the fatal cases of small-pox were registered in Bristol. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had decreased in the eleven preceding weeks from 2873 to 2173, had increased again to 2234 at the end of last week; 348 new cases were admitted to these hospitals during the week, against 305, 309, and 313 in the three preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 212 and 222 in the two preceding weeks, declined again last week to 214, and were 14 below the corrected average number in the corresponding week of the five years 1904–08. The deaths in London referred directly to influenza, which had been 16 and 20 in the two preceding weeks, declined again last week to 17. The causes of 35, or 0·8 per cent., of the deaths registered in the 76 towns during the week were not certified either by a registered medical practitioner or by a coroner. The causes of all the deaths registered during the week were again duly certified in London, Leeds, Bristol, West Ham, Newcastle-on-Tyne, Hull, and in 54 other smaller towns; the 35 uncertified causes of death included nine in Liverpool, five in Birmingham, and four in Manchester.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 929 births and 624 deaths were registered in the week ending May 22nd. The annual rate of mortality in these towns, which had steadily declined in the five preceding weeks from 18·4 to 14·9 per 1000, rose again to 17·5 in the week under notice. During the first seven weeks of the current quarter the death-rate in these Scotch towns averaged 17·0 per 1000, while in the 76 large English towns the mean death-rate during the same period did not exceed 15·3. The death-rates in these Scotch towns last week ranged from 14·0 and 14·1 in Leith and Aberdeen to 20·2 in Greenock and 28·9 in Paisley. The 624 deaths from all causes in the eight towns showed an increase of 92 upon the low number returned in the previous week, and included 76 which were referred to the principal epidemic diseases, against 93, 78, and 47 in the three preceding weeks. These 76 deaths were equal to an annual rate of 2·1 per 1000, against 2·2 and 1·3 in the two preceding weeks; the mean death-rate last week from these principal epidemic diseases in the 76 large English towns did not exceed 1·3 per 1000. Of the 76 deaths from these epidemic diseases last week in the Scotch towns, 38 resulted from whooping-cough, 16 from diarrhœa, 10 from measles, six from diphtheria, three from "fever," and three from scarlet fever, but not one from small-pox. The fatal cases of whooping-cough in the eight towns, which had been 41 and 17 in the two preceding weeks, rose again last week to 38, of which 22 occurred in Glasgow, 10 in Edinburgh, and two in Paisley. The 16 deaths attributed to diarrhœa were within one of the number returned in each of the two previous weeks, and included eight in Glasgow, four in Dundee, and two in Edinburgh. The 10 fatal cases of measles, of which seven were returned in Paisley and two in Glasgow, showed a further increase upon recent weekly numbers. Of the six deaths from diphtheria, against two and five in the two previous weeks, four occurred in Glasgow and two in Edinburgh. The three deaths referred to "fever" were all cases of cerebro-spinal meningitis, and included two in Edinburgh and one in Glasgow. All the three fatal cases of scarlet fever corresponding with the number in the previous week were returned in Glasgow.

The deaths referred to diseases of the respiratory organs in the eight towns, which had been 88 and 92 in the two preceding weeks, further rose to 109 in the week under notice, and exceeded the number returned in the corresponding week of last year by 32. The causes of 22, or 3·5 per cent., of the deaths in the eight towns last week were unspecified or uncertified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had steadily declined in the five preceding weeks from 27·7 to 18·5 per 1000, rose again to 22·3 in the week ending May 22nd. During the first seven weeks of the current quarter the death-rate averaged 22·8 per 1000, whereas the mean rate during the same period did not exceed 14·8 in London and 16·7 in Edinburgh. The 170 deaths of Dublin residents from all causes during last week showed an increase of 29 upon the number returned in the previous week, and included nine which were referred to the principal epidemic diseases, against eight and 11 in the two preceding weeks. These nine deaths were equal to an annual rate of 1·2 per 1000, the death-rate from these principal epidemic diseases in the same week being equal to 1·4 in London and 2·3 in Edinburgh. Of the nine deaths from these epidemic diseases in Dublin last week, four resulted from "fever," four from whooping-cough, and one from diphtheria, but not one from measles, scarlet fever, diarrhœa, or small-pox. The four deaths referred to "fever" exceeded the number returned in any recent week. The 170 deaths registered last week included 34 of infants under one year of age and 50 of persons aged upwards of 60 years. Eight inquest cases and five deaths from violence were registered last week, and 65, or 38·2 per cent., of the deaths occurred in public institutions. The causes of three, or 1·8 per cent., of the deaths in Dublin during the week under notice were not certified either by a registered medical practitioner or by a coroner; all the causes of death registered during the week in London were duly certified, whereas in Edinburgh the proportion of uncertified causes was 4·3 per cent.

VITAL STATISTICS OF LONDON DURING APRIL, 1909.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·4 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 7·2, 6·4, and 5·9 per 1000 respectively. The lowest rates last month were recorded in Paddington, St. Marylebone, Hampstead, Stoke Newington, and Holborn; and the highest rates in Stepney, Poplar, Deptford, Lewisham, and Woolwich. No case of small-pox was notified last month, the numbers having been three and five in the two preceding months. The prevalence of scarlet fever has shown a decline in each successive month of this year; the greatest proportional prevalence of this disease last month was recorded in Hammersmith, Chelsea, the City of London, Deptford, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 2143 scarlet fever patients at the end of last month, against 3147, 2766, and 2412 at the end of the three preceding months; the weekly admissions averaged 262, against 343, 283, and 278 in the three preceding months. Diphtheria was less prevalent in April than it had been in the preceding month; among the various metropolitan boroughs this disease showed the greatest proportional prevalence in Shoreditch, Stepney, Bermondsey, Southwark, Wandsworth, and Lewisham. There were 1012 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 1182, 1152, and 1103 at the end of the three preceding months; the weekly admissions averaged 109, against 136, 133, and 121 in the three preceding months. The prevalence of enteric fever again showed a considerable decline last month; this disease was proportionally most prevalent in Hampstead, Islington, Hackney, Shoreditch, and Deptford. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 126, 124, and 87 at the end of the three preceding months, had further fallen to 57 at the end of April; the weekly admissions averaged seven, against 18, 17, and nine in the three preceding months. Erysipelas was proportionally most prevalent in Finsbury, Stepney, Poplar, Southwark, Deptford, and Greenwich. The 17 cases of puerperal fever notified during the month included two in Southwark and two in Wandsworth. Of the 28 cases notified as cerebro-spinal meningitis, four belonged to Islington, three to St. Pancras, three to Camberwell, and two each to Kensington, St. Marylebone, Hackney, Stepney, Poplar, Bermondsey, and Lambeth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the four weeks ending May 1st the deaths of 5548 persons belonging to London were registered, equal to an annual rate of 15·0 per 1000; in the three preceding months the rates were 16·4, 18·5, and 21·4 respectively. The lowest death-rates last month were 9·8 in Hampstead, 11·3 in Lewisham, 11·8 in Fulham, 12·0 in Greenwich, and 12·4 in Wandsworth; the highest rates were 18·3 in Finsbury, 20·4 in Holborn, 21·8 in Bermondsey, 22·6 in Shoreditch, and 30·8 in the City of London. The 5548 deaths from all causes included 656 which were referred to the principal infectious diseases; of these, 356 resulted from measles, 38 from scarlet fever, 48 from diphtheria, 173 from whooping-cough, seven from enteric fever, one from ill-defined pyrexia, and 33 from diarrhœa, but not any from small-pox or from typhus fever. No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in the City of Westminster, St. Marylebone, Hampstead, St. Pancras, and Lewisham; and the highest rates in Hammersmith, Islington, Finsbury, Shoreditch, Poplar, and Bermondsey. The 356 fatal cases of measles were 125 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Hammersmith, Islington, Shoreditch, Stepney, Poplar, Bermondsey, and Woolwich. The 38 deaths from scarlet fever were slightly fewer than the corrected average number; the greatest proportional mortality from this disease was recorded in Paddington, Poplar, Bermondsey, Lambeth, Camberwell, Lewisham, and Woolwich. The 48 fatal cases of diphtheria were seven below the corrected average; among the several boroughs this disease was proportionally most fatal in Hammersmith, Chelsea, Hackney, Shoreditch, Bethnal Green, Stepney, Poplar, and Camberwell. The 173 deaths from whooping-cough showed a decline of 16 from the corrected average number; the highest death-rates from this disease last month were recorded in Hammersmith, Islington, Holborn, Finsbury, and Shoreditch. The fatal cases of "fever" numbered eight last month, against a corrected average of 15 in the corresponding period of the five preceding years; of these eight deaths, the seven referred to enteric fever belonged respectively to Islington, Shoreditch, Bethnal Green, Lambeth, Deptford, Woolwich, and Wandsworth, and the fatal case of ill-defined pyrexia to the last-named borough. The 33 deaths from diarrhœa were 20 below the corrected average; this disease was proportionally most fatal in Hackney, Finsbury, Shoreditch, and Stepney. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 12 per cent. above the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 100 per 1000. No death at this age was recorded in the City of London; among the metropolitan boroughs the lowest rates of infant mortality were recorded in Kensington, Chelsea, St. Marylebone, Holborn, Greenwich, and Lewisham; and the highest rates in Paddington, Islington, Stoke Newington, Shoreditch, Poplar, and Bermondsey.

UNIVERSITY OF OXFORD.—Georges Dreyer, M.A. Oxon., M.D. Copenhagen, professor of pathology, has been elected a Member of the Danish Royal Academy of Letters and Science.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING APRIL, 1909.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS	Estimated population in the middle of 1909.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,833,938	—	1110	514	1	57	3	17	281	28	2011	5·4	—	356	38	48	173	—	7	1	33	656	1·8	5548	15·0	100
West Districts.																										
Paddington	151,955	—	24	7	—	3	—	—	5	1	40	3·4	—	4	2	—	8	—	—	—	1	15	1·3	175	15·0	126
Kensington	183,683	—	32	14	—	3	—	—	11	2	62	4·4	—	7	2	—	8	—	—	—	—	17	1·2	179	12·7	78
Hammersmith	125,704	—	39	9	—	1	—	—	5	—	54	5·6	—	16	1	2	8	—	—	—	1	28	2·9	153	15·9	113
Fulham	176,406	—	37	23	—	2	—	1	7	—	70	5·2	—	4	—	—	4	—	—	—	1	9	0·7	160	11·8	114
Chelsea	75,249	—	27	6	—	—	1	—	2	—	36	6·2	—	3	1	2	2	—	—	—	—	7	1·2	73	12·6	50
City of Westminster	168,883	—	43	9	—	1	—	1	5	—	59	4·6	—	1	2	—	4	—	—	—	—	7	0·5	175	13·5	97
North Districts.																										
St. Marylebone	126,027	—	20	10	—	—	—	1	4	2	37	3·8	—	2	—	1	3	—	—	—	—	6	0·6	143	14·8	48
Hampstead	94,185	—	16	3	—	2	—	1	3	—	25	3·5	—	1	—	—	3	—	—	—	—	4	0·6	71	9·8	101
St. Pancras	237,422	—	57	26	—	3	—	1	15	3	105	5·8	—	9	—	1	1	—	—	—	—	11	0·6	278	15·3	95
Islington	351,202	—	86	24	—	9	—	1	18	4	142	5·3	—	51	3	1	23	—	1	—	1	80	3·0	427	15·8	140
Stoke Newington	54,423	—	5	—	—	—	—	—	—	—	5	1·2	—	3	1	—	1	—	—	—	—	5	1·2	59	14·1	149
Hackney	237,601	—	50	24	—	6	—	1	5	2	88	4·8	—	8	—	4	13	—	—	—	4	29	1·6	220	15·4	113
Central Districts.																										
Holborn	53,802	—	8	4	—	—	—	1	2	—	15	3·6	—	3	1	—	3	—	—	—	—	7	1·7	84	20·4	65
Finsbury	95,289	—	19	11	1	—	—	—	15	1	47	6·4	—	7	1	—	10	—	—	—	2	20	2·7	134	18·3	108
City of London	18,193	—	7	1	—	—	—	1	—	—	9	6·4	—	—	—	—	—	—	—	—	—	—	—	43	30·8	—
East Districts.																										
Shoreditch	114,802	—	12	20	—	3	—	1	8	—	44	5·0	—	32	1	4	10	—	1	—	3	51	5·8	199	22·6	148
Bethnal Green	131,316	—	20	13	—	2	—	1	5	—	41	4·1	—	2	—	2	7	—	1	—	1	13	1·3	159	15·8	103
Stepney	312,525	—	68	55	—	3	—	—	36	2	164	6·8	—	27	—	5	7	—	—	—	6	45	1·9	380	15·8	82
Poplar	171,965	—	42	24	—	1	—	1	16	2	86	6·5	—	30	3	5	9	—	—	—	1	48	3·6	225	17·1	123
South Districts.																										
Southwark	211,125	—	35	27	—	—	—	2	17	1	82	5·1	—	11	2	3	3	—	—	—	1	20	1·2	243	15·0	99
Bermondsey	127,569	—	26	28	—	1	—	—	5	2	62	6·3	—	38	2	—	4	—	—	—	1	45	4·6	213	21·8	153
Lambeth	324,188	—	73	29	—	5	—	—	9	2	118	4·7	—	18	6	4	12	—	1	—	3	44	1·8	398	16·0	106
Battersea	186,036	—	47	14	—	3	—	1	14	1	80	5·6	—	12	—	2	9	—	—	—	1	24	1·7	188	13·2	92
Wandsworth	297,646	—	79	43	—	2	—	2	15	—	141	6·2	—	24	1	2	8	—	1	1	2	39	1·7	284	12·4	82
Camberwell	283,022	—	65	35	—	2	—	—	9	3	114	5·3	—	20	4	6	7	—	—	—	2	39	1·8	306	14·1	90
Deptford	118,583	—	33	12	—	3	1	—	25	—	74	8·1	—	4	1	1	1	—	1	—	—	8	0·9	118	13·0	57
Greenwich	111,014	—	21	9	—	—	1	—	11	—	42	4·9	—	3	1	1	2	—	—	—	1	8	0·9	102	12·0	62
Lewisham	160,749	—	52	21	—	2	—	—	11	—	86	7·0	—	—	2	1	2	—	—	—	1	6	0·5	139	11·3	67
Woolwich	133,374	—	67	13	—	—	—	—	3	—	83	8·1	—	16	2	1	1	—	1	—	—	21	2·1	160	15·6	96
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: R. F. Bate, to the *Commonwealth*, on recommissioning; M. L. B. Rodd to the *Mars*, on recommissioning; E. T. Meagher, to the *Emerald*, additional, for Haulbowline Yard; and G. T. T. Bishop, to the *Cumberland*. Staff-Surgeon: H. S. Burniston, to the *Britannia*. Surgeon: S. F. Dudley to the *Commonwealth*, on recommissioning; T. R. L. Jones, F. G. H. R. Black, C. F. Bainbridge, and F. W. Quirk, to the *Vivid*, additional, for disposal; G. T. Verry, W. A. H. McKerrow, F. G. Hitch, A. V. J. Richardson, S. L. McBean, and A. C. Wilson, to the *Victory*, additional, for disposal; G. R. McCowen, E. J. H. Garstin, and W. Mearns, to the *Pembroke*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Major G. A. Moore has been appointed a specialist in laryngology to the Eastern Command. Captain T. J. Potter has been appointed to the Queen Alexandra Military Hospital, at Millbank, as clinical pathologist.

TERRITORIAL FORCE.

Yeomanry.

Berks (Hungerford): Surgeon-Lieutenant Maurice W. Coleman resigns his commission (dated April 30th, 1909).

Royal Field Artillery.

2nd South Midland Brigade: Surgeon-Captain George H. Rutter resigns his commission (dated March 31st, 1909).

Royal Army Medical Corps.

3rd South Midland Field Ambulance: Lieutenant Bertram M. H. Rogers to be Captain (dated April 8th, 1909).

London Mounted Brigade Field Ambulance: Hugh Stanley Beadles to be Lieutenant (dated March 5th, 1909).

1st South Midland Mounted Brigade Field Ambulance: John Milne Dalrymple to be Lieutenant (dated April 6th, 1909).

2nd London Sanitary Company: Lieutenant Walter F. Corfield to be Captain (dated March 30th, 1909). Peter Caldwell Smith to be Captain (dated March 30th, 1909).

For attachment to Units other than Medical Units.—Surgeon-Captain Edward Gray, from the 2nd Cheshire (Railway) Royal Engineers (Volunteers), to be Captain, with precedence as in the Volunteer Force (dated April 1st, 1908). William James Hoyten to be Lieutenant (dated April 21st, 1909).

VOLUNTEER CORPS.

Infantry: 2nd Volunteer Battalion, The King's (Liverpool Regiment): Surgeon-Lieutenant William H. Broad resigns his commission (dated March 31st, 1908).

Royal Army Medical Corps: London District, London Companies: Lieutenant Allan C. Parsons resigns his commission (dated March 31st, 1908).

DEATHS IN THE SERVICES.

Brigade-Surgeon Lieutenant-Colonel James Wilson, retired pay, late Army Medical Department, on May 15th, aged 73 years. He entered the service as assistant-surgeon in 1858 and reached the rank of surgeon-major in 1873. In 1889 he was appointed brigade-surgeon and retired in 1891. He served with the Hisarak expedition in Afghanistan in 1878–80 (mentioned in despatches and medal) and in Egypt in 1882 (medal and bronze star).

DEATH OF AN INDIAN MUTINY VETERAN.

Dr. William Wotherspoon Ireland of Musselburgh who died on May 17th, in his seventy-seventh year, was at one time attached to the Bengal Horse Artillery as assistant-surgeon, and at the siege of Delhi was dangerously wounded and lost the sight of one eye.

THE TENURE OF ROYAL ARMY MEDICAL CORPS APPOINTMENTS.

The following is the full text of the communication to which we referred in our last issue and which appears in the May number of the *Journal of the Royal Army Medical Corps*:—

1. The tenure of the undermentioned Royal Army Medical Corps appointments is as noted.

(*a*) For three years but which may be extended to five: Royal Hospital, Chelsea (*); Royal Hospital, Kilmainham (*); Duke of York's School; Army Clothing Department, Pimlico; D. Block, Netley; Army Medical Stores, Woolwich (Q); Army Medical Stores, Dublin (Q).

(*b*) For four years: Staff at War Office (*); Royal Army Medical Corps School of Instruction, Commandant and Officer Commanding Depôt, Royal Army Medical Corps; Instructor Training School; Assistant Instructor Training School; Instructor School of Army Sanitation; Commandant Royal Army Medical College (*); Professors Royal Army Medical College (*); Adjutants Territorial Force (*); Staff Officers to Principal Medical Officers; Medical Officer in Charge, Royal Military College, Sandhurst; Medical Officer in Charge, Royal Military Academy, Woolwich; Medical Officer in Charge, School of Musketry, Hythe.

(*c*) For three years: Members of Army Medical Service Advisory Board; Medical Inspectors of Recruits; Senior Recruiting Medical Officer, London District; Sanitary Officers of Commands, and London District; Officers Commanding Companies, Depôt, Royal Army Medical Corps, Aldershot; Adjutant Depôt, Royal Army Medical Corps, Aldershot; Medical Officers, Royal Arsenal, Woolwich; Embarking Medical Officer, Southampton.

Officers in Charge: Royal Victoria Hospital, Netley; Surgical Division, Royal Victoria Hospital, Netley; Medical Division, Royal Victoria Hospital, Netley; Royal Herbert Hospital, Woolwich; Medical Division, Royal Herbert Hospital, Woolwich; Surgical Division, Royal Herbert Hospital, Woolwich; The Tower, London; Queen Alexandra Military Hospital, Millbank; Cambridge Hospital, Aldershot; Surgical Wards, Cambridge Hospital, Aldershot; Medical Wards, Cambridge Hospital, Aldershot; Connaught Hospital, Aldershot; Officers and Families, Wellington Lines, Marlborough Lines, and Stanhope Lines, Aldershot; Royal Infirmary, Dublin; Military Hospitals: Colchester, Chatham, Shorncliffe, Cork, Curragh, York, Edinburgh, Tidworth, Cosham, Devonport, Jersey (Senior Medical Officer); Family Hospitals: Curragh, Fermoy, Aldershot, Chatham, Woolwich, Shorncliffe, Tidworth, Portsmouth, Devonport, Colchester.

The Registrars Royal Victoria Hospital, Netley, and Royal Herbert Hospital, Woolwich.

2. In addition the Director-General nominates officers for the following appointments which are not, however, for fixed periods:—

(*a*) Medical charge of the Military Hospitals Hounslow, Warley, Fermoy, Belfast, Chester, Bulford.

(*b*) The staff at Queen Alexandra Military Hospital, Millbank.

(*c*) All full-pay recruiting appointments.

(*d*) All retired-pay appointments.

3. Exchanges are permitted between officers on same roster, viz.:—

(*a*) Selected Lieutenant-Colonels.

(*b*) Lieutenant-Colonels on the lower rate of pay, Majors, and Lieutenant-Colonels.

(*c*) Captains.

(*d*) Quartermasters.

4. An officer who has returned to the United Kingdom on completion of a tour of foreign service will be required to serve a year at home before an exchange can be sanctioned.

(Q) For Quartermasters.

(*) Gazetted appointments.

Correspondence.

"Audi alteram partem."

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—In your annotation on this subject in THE LANCET of May 8th you say: "We do not suppose for a moment that the chairmen and secretaries of the London hospitals, whether they agree with any proposals made to them by the London County Council or no, will come to any decision in the matter without a proper consultation with their medical staffs." It is as well that too great confidence should not be placed in this pious opinion, which I have good reason to believe is not wholly warranted. In your issue of May 22nd Dr. Robert Hutchison says, "They (your correspondents) write as if it were the wish of the Council to get the school children treated by the honorary staffs of the hospitals, and treated gratuitously," and deprecates the suggestion. If he has not already received evidence to make him change his opinion he will not have to wait long for it, and he will find that this exploitation of the honorary staffs is not so repugnant to the "chairmen and secretaries" of hospitals as to ensure it being promptly negatived. It cannot be doubted that nothing would please the London County Council better than thus to exploit the honorary staffs of the hospitals, and with consummate address they hold out a bait which strongly appeals to the lay committees. It is a sprat to catch a mackerel, and, *mirabile dictu*, many hospital physicians and surgeons fail to appreciate the magnitude of the mackerel. He who pays the piper will certainly want to call the tune, and anyone who has even superficially followed the trend of recent national and municipal politics must realise that in this instance we are dealing with the prologue to the municipalisation of London hospitals under the ægis of the London County Council. It is impossible to imagine unanimity in hospital matters, but probably in no case could a nearer approach to it be attained than in recoil from this fate. Centralisation of hospital control is inevitable, and

for my part I should welcome it as a relief from many of the anomalies with which we are burdened. But who really pays the piper? The charitable public, whose chief representative is the King's Hospital Fund. Well, let them call the tune, as at least the lesser of two evils.

I have written strongly on this matter, Sir, because it appears to me that a great principle is at stake, and infinite difficulty will be experienced in regaining lost ground if a mistake is made. You have wisely emphasised the importance of collaboration amongst the hospital staffs—with what result? Already a conference of the Children's Hospitals has been held, and, as I am informed, a definite policy has been adopted. Meanwhile the general hospitals are for the most part holding their hands until their medical representatives report upon the results of combined discussion. Much of the confusion in these matters is due to the varying nature of the committees, sometimes purely medical, sometimes mixed medical and lay. It would surely be wisest for *no* hospital to take any steps until the question has been thoroughly threshed out by the medical representatives of the general hospitals.

I am, Sir, yours faithfully,

Wimpole-street, W., May 24th, 1909. J. HERBERT PARSONS.

To the Editor of THE LANCET.

SIR,—As you have pointed out, the object of securing proper medical attendance for school children is not so much to secure the welfare of the individuals as to protect the State against wasteful and useless expenditure; it is definitely a public object and should be secured by the employment of public funds. It would not compare in amount with the wasteful expenditure which has been going on ever since 1870, in the employment of expensive teachers and school machinery upon children incapable of deriving benefit from teaching, and it would be incurred in the direct interests of economy. The educationists of 1870 were not physiologists. They did not even recognise the fact that a child is a young and immature living organism, and that the development of an immature living organism along any or all possible lines is a purely physiological problem. They conceived it to be possible, judging from their acts and their pronouncements, to "educate" the child of an average labourer in the same way and to the same extent as the child of successive generations of cultivated people; and they devoted an immense amount of time and millions of the national money to a task which might be likened to that of digging for diamonds in a rubbish heap. We are now beginning to realise how much of this was a mistake, and to know that our labouring classes do not contain a stock of dormant philosophers whose faculties can be brought into sudden activity by schooling. For the great majority of them the best that can be done or hoped for is to teach their children how to learn, and at the same time to remove from their path impediments fatal to any prospect of success. If this were done under the guidance of medical and physiological knowledge there would be some hope that future generations might reap a remunerative harvest. For many years to come, however, the schoolmaster will only be able to work to advantage under the guidance of the physician; and the sooner this guidance is extended to him, under conditions satisfactory to the profession, the better it will be for all concerned. In the meanwhile, medical practitioners should realise the supreme national importance of their portion of the work, and might usefully consider, in each locality, upon what terms it should be undertaken. The fear that they may be "exploited" is one which can scarcely be realised except through their own fault.

I am, Sir, yours faithfully,

May 24th, 1909. F.R.C.S.

THE WORKMEN'S COMPENSATION ACT, 1906.

To the Editor of THE LANCET.

SIR,—In 1899 you were kind enough to allow me to place before the profession the working of the Workmen's Compensation Act, 1897, as seen from a medical point of view; as I have now had equal experience of the Act in force to-day, that of 1906, I shall be greatly obliged for the hospitality of your influential columns again.

The Act in its present form came to everyone as a surprise, for on the report of the departmental committee of the Home Office the Government promoted a Bill which did not include compensation to shop assistants or domestic servants, grooms, and gardeners. At a psychological moment, however, the House of Commons suddenly extended the entire scope of the Act, when there was no time for any consideration of the possibilities which such an extension might produce. With practically the whole working-class population included under the Act a much greater number of safeguards were required than were necessary under the old Act, for in the first place many small employers were for the first time rendered liable, and secondly, the burden to all classes of employers was greatly increased. In the absence of carefully considered safeguards the working of the Act has been in many instances very unfair by reason of the absence of proper rules as to notice of injury, belated claims being made months after the date of the alleged accident, and in some cases I have met with no medical man has been consulted or treatment of any kind obtained.

It may be urged that the Act provides that notice shall be given "as soon as practicable," "before the workman has voluntarily left the employment," and "within six months from the date of the accident," but this is all discounted, for it is further provided that no defect or inaccuracy in the notice shall be a bar to proceedings if the employer is not prejudiced thereby, and failure to make a claim within six months shall not be a bar if "it was occasioned by mistake, absence from the United Kingdom, or other reasonable cause." There is no power of resisting a claim in which an insufficient notice has been given, except by procedure in a county court, with the production of evidence that the employer has been prejudiced. In many cases it is cheaper to admit and pay the claim. From my experience I think that every claim should be made within three months at the outside and should be accompanied by a medical certificate. If it is believed that it would be any hardship to workmen in providing this, then, considering the heavy burden cast on employers, the State might pay a small fee, as is done under the Act for the Notification of Infectious Disease, the form of certificate to be obtained at any post-office. With this greater stringency of notice I think the workman could be benefited, while what is very often a great injustice would be removed. I have constantly seen that employers take no notice of a claim and do not pay any half wages, leaving the workman to starve or pawn his goods, and I have frequently found the condition of an injured workman made much worse by privation and anxiety, and this in cases in which liability was immediately admitted on receipt of a solicitor's letter. On a notice of injury being received, accompanied by a medical certificate, the employer should within two weeks from the date of the certificate either commence the payment of half wages or repudiate the liability in writing, a penalty to be enforced if this is not done. As a matter of fact, it is in the interest of the employer not only to pay the half wages promptly but to see that the injured workman is receiving proper medical attention and nursing, as this will in many cases shorten the period of disability.

Under the Act settlements must be registered at a county-court, and a registrar has the power of refusal to register if he considers a settlement "inadequate." The registrars are most careful and painstaking, and generally have any workman wishing to register called before them, yet they have no proper machinery for deciding whether an amount is inadequate or not, and I have known registration to be refused when a settlement had been arranged between solicitors by the workman cleverly malingering before the registrar. It may be said that the judge can be appealed to, but it costs money, and employers and those who insure them cannot afford legal expenses if they can possibly be avoided. I feel sure that if the Secretary of State would make an order giving the registrars power to obtain advice from a medical referee as to the physical condition of a workman wishing to settle it would relieve the registrars of much trouble and anxiety. This could be done at slight expense to the State. Under the present haphazard system insurance offices and employers often prefer not to register at all, taking the chance of the matter being reopened.

It must be remembered that the question of settlement by the payment of a lump sum, in lieu of weekly payments of half wages to an injured workman during the whole continuance of his disablement, is one of the greatest possible consequence. Where the disability is not permanent and

can be assessed, or if the disability is partial and the workman can, with a little capital, provide for himself and family by means of a small business or shop, settlement is in the interest of both employer and workman. In cases of serious permanent disablement, settlement merely means that the money will be spent in a shorter or longer time and that the disabled workman will have to be supported by the rates, whether under the present Poor-law or the proposed Public Assistance organisation. If employers settle permanent cases they will be doubly taxed by the money they pay and by their future contribution to the rates. It is therefore in the interest of employers and insurance offices of standing and position that every settlement should be absolutely fair and carefully considered in all its bearings. This great question should be fully understood by every medical man, not only for the purpose of his examinations and reports, but for his protection as a citizen and a ratepayer.

An anomaly which sometimes causes great inconvenience and sometimes loss to employers is that while under the Workmen's Compensation Act a workman is obliged to submit himself to be examined "by a medical practitioner provided and paid by the employer," under regulations which have been made by the Secretary of State, workmen who claim under the old Employers' Liability Act, alleging some negligence of the employer or of his servants, or some defect in the plant or machinery used, are not obliged to submit themselves for medical examination. Claims are frequently made under the Employers' Liability Act which are clearly only cases which rightly are under the Workmen's Compensation Act, and are afterwards admitted to be such, the sole reason for this being that medical examination may be delayed, and the period of disability of the alleged injury lengthened. I have frequently been put off for two or three weeks and have found at the examination nothing the matter with the workman, being, however, told that if I had seen him before I should have found him in a terrible state.

Whatever a medical examiner's private opinion may be, he can only certify of his own knowledge as to the state of a workman at the moment of examination; it is therefore urged by many who represent employers that workmen claiming under the Employers' Liability Act should be subject to the same rules as to medical examination as are enforced in the case of claims under the Workmen's Compensation Act, and submit themselves for examination without delay.

I am sorry to say that the Act seems to have a demoralising effect on a large and increasing number of persons, many of whom look upon a slight accident as a means whereby they may get a heavy settlement or a pension for life. Every possible artifice and subterfuge are frequently brought to bear, and I earnestly ask medical men to be doubly on their guard when asked for a certificate under the Act for the purpose of making a claim. It is only the carefulness and impartiality of the medical profession that sometimes stands between a small employer and absolute ruin. On the other hand, it is only the considered opinion of a medical man which enables a workman to obtain compensation when he is clearly entitled to it. Medical men are therefore practically placed in the position of arbitrators in a great number of cases and I feel sure that the profession will, with the increase of responsibility, continue to maintain the high position that it holds in the estimation of the general public.—I am, Sir, yours faithfully,

ALBERT BENTHALL, F.R.C.P. Edin., &c.

S. Hampstead, N.W.

THE POSITION OF PRIMARY EDUCATION IN IRELAND: THE BELFAST AND CO. DOWN SCHOOLS.

To the Editor of THE LANCET.

SIR,—For several years past the reports of the Commissioners of National Education in Ireland have shown that many of the primary schools of Ireland are in a most insanitary condition. Overcrowding, bad ventilation, neglect of cleaning, absence of proper closets were most commonly met with. In Belfast Mr. P. J. Kelly, a senior inspector of the Board of Education, reporting on the schools of Belfast, recently stated:—

In Belfast much remains to be done; allowing 10 square feet per pupil the accommodation is insufficient in about 27·7 per cent. of the City schools, in 24 per cent. it is fair, and in 48·3 per cent. it is ample. One school, for example, has floor space for 232, but I found 331 pupils present. In another school there is accommodation for 118, while the average attendance is 160. In a third school the corresponding figures are 187 and 236·8. But even in schools where the floor space is adequate the class rooms are often greatly overcrowded. In one school there was only accommodation for 18, while 39 children were in attendance; there was only one window. In another where the accommodation was for 12 only, and there were 36 present. There was only one window again, and this could only be opened from the top. In eight cases the ventilation of the schools was poor, in two cases it was bad, and in the remaining cases it was fair. In one school the children were crammed into the class-room for singing, several of them being squatted on the floor. As things ordinarily go, sanitation in some of the Belfast schools is a matter upon which the general public is quite indifferent, but when anything like an epidemic creates a panic the general public disturbs itself.

One of Mr. Kelly's assistant inspectors, Mr. Mangan, reports:—

There was an outbreak of spotted fever in 1907, the scourge affected many of the citizens, and the public health authorities of the Belfast City corporation became actively interested in the sanitary condition of the schools. Floors were scrubbed, out-offices were carefully looked after, and the general question of sanitation was treated more seriously and systematically than before.

Had there been no epidemic the sanitary condition of the schools above stated would have been, I believe, completely ignored.

Dr. Starkie, Resident Commissioner of National Education in Ireland, stated, on Sept. 30th, 1905, on the occasion of the opening of the O'Neill Memorial National School, Crossnacreevy, Castlereagh, co. Down, in approving of the plans of the above school:—

They represent a degree of excellence in school architecture rarely attained in this country (Ireland),

and pointed out how great the necessity is for that excellence to be imitated.

"Irish schools," he states, "are as a rule very defective in plan when compared with the English and Scotch schools, and one of the many causes hampering the advancement of education in Ireland is undoubtedly the unsatisfactory condition under which Irish teachers are compelled to do their work. Of course, there is in some measure a very good reason for Irish schools being behind those in England and Scotland—there are no rates to provide buildings, but that does not justify, let alone excuse, the state of affairs that prevails. Speaking generally, all over Ireland the character of the primary school accommodation is a hindrance to education. There are great exceptions here and there. We have a few even in Belfast among the later erected schools. But it may be a source of surprise to some among us to learn that in this matter our city is under special reproach. The great city of Belfast is signally deficient in this respect to judge from inspectors' reports, and from my own observation there is no city in the three kingdoms where school accommodation is so open to adverse criticism."

From personal knowledge, I can bear testimony that the schools in co. Down are in a state very similar to that above described with reference to the schools in Belfast. The estimates for public education in Ireland during the ensuing financial year are £1,621,921, being a net increase of £77,103, of which amount £74,548 go to national schools. I consider this amount totally inadequate and strongly recommend the Government to grant out of the surplus funds obtained by this year's Budget sufficient means by which the primary education of Irish children may be placed on an equal footing with the children of our English and Scotch people. I am, Sir, yours faithfully,

HENRY O'NEILL, M.D. R.U.I., J.P.,
Manager, O'Neill Memorial National School,
Crossnacreevy, Co. Down.

Belfast.

THE HISTOLOGY OF RHEUMATIC ENDOCARDITIS.

To the Editor of THE LANCET.

SIR,—I was interested to find that Dr. Carey Coombs in his paper in THE LANCET of May 15th, p. 1377, brought evidence in support of the view that the rheumatic infection reaches the valves of the heart by the coronary circulation. It was a conclusion which Dr. A. Paine and I proved in our first paper on Acute Rheumatism in THE LANCET in September, 1900. The experimental proof is not very difficult when once a satisfactory culture of the diplococcus commences to produce endocarditis with constancy, for an animal can then be killed in an early stage of endocarditis. We published figures illustrating this point, and also others showing the early formation of a vegetation under the endothelium. In this fact lies the solution of two difficulties: one is the explanation of the difficulty of finding the diplococci in simple rheumatic endocarditis, a task which has led some of the workers at this subject to say the cause of the disease is unknown. Histological investigations, however, show that

in acute rheumatism the micrococci, which are subendothelial, are rapidly destroyed, but the local lesions, the result of their virulence, do not disappear so readily. The other difficulty is that of understanding malignant rheumatic endocarditis. When the diplococcus has sufficient virulence to destroy the surface endothelium of the valve and to live vigorously and persistently in the vegetation, then a simple becomes a malignant rheumatic endocarditis. Here, again, experiment and histological investigation enable one to link up the chain. We also showed that a deposit of fibrin, so often described in text-books, is no essential feature of a simple vegetation, which is at first entirely subendothelial.

I should like to read some account from the opponents of the view that rheumatic fever is due to the diplococcus of careful histological investigations such as Dr. Coombs is making. It is by these slow and prolonged studies that one learns very instructive points. For example, from a case of fatal chorea I was once able to get a simple rheumatic endocarditis in the early active stage, and with Dr. Paine was able to demonstrate the micrococci in great numbers under the endothelium of the mitral valve, and also in great quantities in some minute blood capillaries at the base of the valve. Such a chance will probably not occur twice in a research lifetime, and is a striking support to Dr. Coombs's contention that the infection reaches the valves by the coronary circulation. Naturally I cannot admit that there is a single weak link in the chain of proof that the diplococcus is *a*, and probably *the*, cause of acute rheumatism. As to the specific nature of the diplococcus that is a different matter, but Dr. Coombs's investigations appear to me to strengthen the evidence in favour of there being some specific reaction produced in the tissues by this micro-organism.

I am, Sir, yours faithfully,

Harley-place, W., May 25th, 1909. F. J. POYNTON.

"RADIUM APPLICATORS" IN PRACTICE.

To the Editor of THE LANCET.

SIR,—With reference to the idea that in order to gain the full effect of a radium salt it is necessary to spread it over the surface of an applicator in a mixture of varnish, as is described to be the present mode of use at the Paris Radium Institute, is it absolutely certain that such a procedure is necessary—or even advantageous—in the practical use of a radium salt for varied purposes?

In the treatment of skin affections where the affected area is extensive and little penetration is required, a rectangular surface has advantages over a circular surface, as the applications can be made without overlapping or leaving intervening spaces. This was pointed out some time ago by the late Mr. Hartigan. But there are many cases where the corners of a rectangular applicator would be inconvenient, and at the present price of radium there will be few who will be able to afford radium applicators of varied form. For those cases where the affected area is extensive and little penetration is required, I have found that aluminium foil (known in the trade as "0·004 to 0·008") is useful. The foil can be cut to the required shape, and if heated to dull redness and allowed to cool slowly, can be moulded to the surface of the part which is being treated. The ordinary radium box applied to this foil renders the foil radio-active throughout its extent, and the same effect is produced as by spreading the radium. Again, where greater penetration is required, it is surely reasonable to expect greater power of penetration from a focus where the radium salt is concentrated than when the salt is spread over a surface, and, as it were, diluted. The power of penetration will diminish in ratio to the extent to which the radium salt is spread. This is shown by the fluorescent screen, on the proof-plane, and by the electroscope.

It appears to me, therefore, that at the present time, and in the present scarcity of radium, the first-devised form of radium box still has its advantages. It can be used with aluminium foil in the manner I have described. It can be placed in a test-tube and thus applied in hollows and cavities. Where there are nodules of malignant growth to be seen, such as those appearing in a scar after operation, the rays from a focus of radium can be brought to bear upon each nodule. And where the disease is more deeply seated, as in the substance of the breast, by simply applying the box of radium in different situations upon the breast surface for short periods of, say, 10 to 15 minutes that action of deeply penetrating rays can be obtained which has been dignified by the special designation of "cross-fire."

I am, Sir, yours faithfully,

7 Ashley-place, S.W., May 22nd, 1909. R. BROWNE-CARTHEW.

THE BUDGET AND MEDICAL PRACTITIONERS.

To the Editor of THE LANCET.

SIR,—I presume that Dr. Clement Dukes is not a motorist. The attitude he adopts in the letter which you publish in to-day's issue is calculated to considerably injure those of our profession who do their work by car instead of by horse traction. The Chancellor of the Exchequer has realised that the motoring doctor deserved lighter treatment than the wealthy tourist, but Dr. Dukes would scorn such consideration.

Let us examine his alternative proposals: 1. That the honorary staffs of hospitals should receive fees for attendance at inquests. This in a town of 210,000 inhabitants would amount to about £5 divided up between ten men out of the 120 practising here, of whom 17 at least are motorists and who will have to contribute at least an extra £5 apiece per annum to the exchequer through the petrol tax, a total of £85 as compared with £5 under Dr. Dukes's proposal. 2. The amended laws of death certification recommended by Dr. Dukes would entail additional work which would be probably barely covered by the fee. 3. As regards the proposed remuneration of resident medical officers for attendance at inquests, having held in the past such appointments for two years, I may venture to say that the forensic experience thus gained early in professional life more than repays one for the trouble.

Finally, may I ask if Dr. Dukes realises that if automobilism advances as it has been doing up to the introduction of this Budget, in eight or ten years' time half the profession will be able to afford cars, to the great benefit of themselves and their patients.

I am, Sir, yours faithfully,

Southsea, May 22nd, 1909. M. ASTON KEY.

A FATAL CASE OF POISONING BY VERONAL.

To the Editor of THE LANCET.

SIR,—The following notes may interest your readers, as they refer to the fatal case of veronal poisoning to which you alluded in your issue of May 22nd.

A man, aged 40 years, who had for some weeks been in the habit of taking veronal for sleeplessness, in doses varying between 10 and 30 grains, being probably desirous of sleeping through the whole of a certain day, about the midnight previously took 10 half-gramme tablets and two cachets of 12 grains each, a total of 99 grains. Half an hour afterwards he experienced severe abdominal pain, but in an hour he was fast asleep. I first saw him 17 hours after he had taken the drug. He was then quite comatose; pinching, pressure on the supra-orbital nerve, &c., failed to produce any reaction. The pulse, full and bounding, was 120. Temperature 99° F. in axilla. Respiration 24. Pupils moderately dilated and reacting to light, but no conjunctival reflex. Skin hot and dry. He had passed a large quantity of urine into the bed. A small quantity obtained by catheter and tested showed a faint trace of albumin, specific gravity 1020, rather high-coloured, but not of the reddish tinge associated with hæmatoporphyrinuria. From this time onward to the time of his death the pulse gradually quickened to 150 and was easily counted. The temperature taken again 24 hours after the drug had been taken, rose to 101° in the axilla, and a few hours before death was 104° in the axilla. The respiratory rate quickened to 32, 24 hours from onset, and then remained almost constant until a few hours before death, when it rose, coincidently with the onset of pneumonic congestion, to 44. 20 hours after taking the dose a thin, frothy, light-yellow, sweetish-smelling discharge began to exude from the mouth and continued profusely until death, necessitating constant clearing of the mouth and pharynx. The urine was passed at intervals in considerable quantity. That obtained by

catheter 48 hours from the onset showed the same features as mentioned above, and as far as I could ascertain without spectroscopic examination contained no hæmatoporphyrin. For the last 12 hours sweating was profuse. Death occurred 53 hours after taking the overdose, there having been no return to consciousness from the first onset of sleep. The treatment adopted was purely stimulating. Being called so late to the case emptying the stomach was futile. Strychnine, brandy, and digitalin were alternately injected hourly. To diminish the excretion of the mouth and throat atropine sulphate 1-100th grain was injected without apparent effect.

I am, Sir, yours faithfully,

F. E. WALKER, M.B., B.S. Lond.

Uxbridge, May 22nd, 1909.

SMOKE ABATEMENT.

To the Editor of THE LANCET.

SIR,—In the remarks in THE LANCET of May 15th with regard to smoke abatement it is noticeable that no allusion is made to one of, it appears to me, the most obvious and best of methods of preventing London fogs, that is, the substitution of smokeless fuels for coal as at present used. Both anthracite coal and coalite provide the advantages of open fires and are, I believe, as efficient for heating and cooking as ordinary coal. Any observant householder could satisfy his mind on this question by the trial of one or of both. The reduction of sunlight and the ill effects produced in various ways on the health of the inhabitants of London and other large cities by smoke, as well as the drawback to trade which fogs occasion, afford good reasons for using every endeavour to prevent them.

White fogs are seen in New York, but the smoke nuisance is, I am told, unknown, and the only reason for its absence appears to be the greater use of hot-water coils, gas, electricity, and of anthracite or other smokeless coal. With by-laws which prevent those living in houses rented at £200 per annum or above from burning ordinary coal in the first year of their institution, and those living in houses at a rental of £50 less similarly treated in the second year, and so on, in five years the capital would be rid of smoke-emitting chimneys. If, then, London can be relieved of the ban of smoke-laden fogs, with which it has been inflicted for many generations, by ensuring the use of smokeless fuel in all houses in a certain mapped-out area in the first instance, and later in factories, &c., why wait much longer before adopting the necessary measures?

I am, Sir, yours faithfully,

Oxford, May 17th, 1909. A. STAYT DUTTON.

ACUTE RHEUMATISM AND TONSILLITIS.

To the Editor of THE LANCET.

SIR,—The association of rheumatic fever and tonsillitis is well known, but is one which is often difficult to prove. Recently I have been attending two cases of tonsillitis and pharyngitis in the same household, one of the patients being a girl of 19 and the other a little girl of four years of age. The attack started as a pharyngitis and tonsillitis in both instances and almost simultaneously, the main character of the local inflammation being a dusky redness of the tonsils and fauces, associated with pain on swallowing. The temperature was 101° F. in both, tending to rise in the child to 102° and more in the evening; there was definite tenderness along the tibiæ and of the ribs, and a soft systolic murmur at the apex in the child, indicating endocarditis. The older girl complained of marked tenderness "all over," but mostly in the joints of the wrist and elbow, and pain on movement; in her case no systolic murmur could be detected. There was no marked swelling or redness of the joints in either case. I quote these two instances arising in the same house in order to emphasise the following points: 1. The infectious nature of the complaint. 2. The fact that the tonsils and pharynx are probably the most frequent sites of primary infection and transmission to other parts (endocardium, &c.). 3. The character of the pharyngeal and tonsillar inflammation (dusky red, no patches of secretion or sloughing). 4. The frequency with which these "throats" are diagnosed as simple tonsillitis and pharyngitis (due to ordinary pyogenic organisms). 5. The importance of careful examination of the cardiac area, especially in children in whom the symptoms of a mild pharyngitis are associated with bone and joint tenderness.

Both Osler[1] and Goodhart and Still[2] emphasise the frequency of the origin of acute rheumatism as a "sore throat." I also remember a case at the Essex County Hospital where a young man who was admitted for the same association of symptoms developed marked mitral and aortic disease which resulted in chronic disease of the mitral and aortic valves.

I am, Sir, yours faithfully,

H. A. HAIG, M.B., B.S. Lond., M.R.C.S. Eng.

Hendon, N.W., May 24th, 1909.

ENUCLEATION OF THE TONSIL.

To the Editor of THE LANCET.

SIR,—I read with much interest the article by Dr. G. E. Waugh on enucleation of the tonsil in your issue of May 8th, as during the past 12 months I have performed at the Eye and Ear Hospital, Croydon, over 100 enucleations, the majority being in adults, and so can testify both to the simplicity of the procedure and also to its comparative bloodlessness. There was one point to which no reference was made—namely, the plica triangularis, which, especially in adults, owing to some shrinkage of tonsillar tissue, is easily mistaken for the anterior pillar. It is often adherent to the tonsil, and an incision made just posterior to the plica would enter tonsillar tissue and instead of exposing the capsule, which is the quintessence of the operation, it would cause such hæmorrhage as to render enucleation practically impossible. Whether spasm of the glottis be due to traction on the posterior pillar or not is a contentious point, and personally I have rarely been able, after control of the hæmorrhage, to excite any spasm by such traction.

I am, Sir, yours faithfully,

JAS. FORREST, M.B., F.R.C.S. Edin.

Croydon, May 18th, 1909.

AN APPEAL TO LIBRARIANS AND BOOK COLLECTORS.

To the Editor of THE LANCET.

SIR,—In connexion with the first meeting of the Medical Library Association to be held in Queen's College, Belfast, during the last week in July, a loan exhibition will be held illustrating medical libraries and medical literature.

Amongst other things, we are particularly anxious to receive the following: (1) MSS. and early printed books; (2) first editions of noteworthy books; (3) early Irish printed books (there are few, if any, before 1700); (4) books on tuberculosis; (5) books upon Celtic medicine; (6) photographs of libraries; (7) statistical diagrams giving number of volumes, issues, readers, income, &c.; and (8) library papers, rules, &c.

The association will insure all loans and the exhibits will be most carefully guarded. We venture to hope for early and favourable replies, as the time for the preparation of the exhibit is rather short.

We are, Sir, yours faithfully,

I. WALKER HALL, CUTHBERT E. A. CLAYTON, } Hon. Secretaries,

Medical Library Association, the University, Manchester.

May 17th, 1909.

MEDICAL MEN AND THE CLERGY IN RELATION TO "CHRISTIAN SCIENCE."

To the Editor of THE LANCET.

SIR,—It is perfectly obvious that you are opposed to the teachings of Christian Science, but that is no reason why, when an attack upon Christian Science is reported in your columns, you should hesitate to extend to the person attacked the courtesy extended to the attacker. It is, on the contrary, an additional reason for the extension of your courtesy to the attacked. In these circumstances you will, I think, permit me to take exception to the tone and reasoning of Mr. Stephen Paget's criticism of Christian Science.

It has been said, and said with reason, that when a man

[1] Osler: Principles and Practice of Medicine, 1907.
[2] Goodhart and Still: Diseases of Children, 1905.

becomes angry he commonly gives away his case. Mr. Paget is obviously so angry that whatever he may have done for his case he has certainly given away himself, for when a gentleman proposes that the life of the "Lady Bountiful" of a village should be made a "positive burden to her," through the coöperation of the doctor and the clergyman, simply because she happens to be a Christian Scientist, he is developing a campaign of unashamed persecution.

The Christian Science Church has, as I am almost tired of saying, no quarrel with the medical profession. The members of the Christian Science Church number thousands of doctors amongst their personal friends, and they have one and all the utmost admiration for the members of a profession which has, and is, spending itself unstintingly in the effort to ameliorate human suffering. Christian Scientists, of course, do differ completely from the methods advocated by the medical profession; they do not on that account find it necessary to speak discourteously of the members of that profession. They consider, consequently, that they have a right to the same courtesy from those who are opposed to them. Mr. Paget speaks of Christian Science as "sham philosophy" and "rotten metaphysics," and in so doing seems to forget that there are hundreds of Christian Scientists as cultivated and as intelligent as himself. Because these Christian Scientists have accepted certain doctrines which are anathema to himself, he proposes that they should be practically hounded into recantation. He should know that such methods never have been, and never will be, successful in convincing men and women of the errors in their views. If Christian Science is fatuous nonsense there is not the remotest chance of its ever being more than a fleeting cloud across the horizon. The very violence of Mr. Paget's attack shows that he, at any rate, is doubtful of the accuracy of his own assertions.

Humanity will accept whatever form of help meets its need in the most practical manner. It is only necessary to show the world that the healing power of orthodox medical science is more efficacious than that of Christian Science in order to win the day. It is equally certain that it is impossible to bully or persecute Christian Scientists into laying down their arms. Mr. Paget's attempt to do this will very soon convince him that it is easier to represent Christian Scientists as ignorant impostors than to do the work they are doing; and when he comes some day to understand the work they are doing, he will come to understand why it is impossible to uproot it, however much he may be prepared "to laugh it to scorn."—Yours truly,

FREDERICK DIXON.

Surrey-street, Strand, W.C., May 22nd, 1909.

*** We comment elsewhere upon this letter.—ED. L.

THE CAUSE OF DEATH AFTER OPERATION IN ACUTE APPENDICITIS.

To the Editor of THE LANCET.

SIR,—I read with interest in THE LANCET of May 22nd Professor C. A. Morton's paper on Appendicitis. Like him I feel disappointed that any case of suppurative appendicitis should die. Whenever the appendix ruptures septic absorption in many cases begins immediately, more especially in children. Medical practitioners have done a great deal towards diminishing the mortality of appendicitis by early operation, and I hope to see the day when every case of ruptured appendix with commencing abscess will be operated on on the first day of the disease, especially in young people.

Such cases should be put in the same category as ruptured gastric ulcer, which no one nowadays thinks of treating in any other way than by operation. The value of early operation is well illustrated in the statistics given by the Mayos. In 1908 they operated on over 500 cases of suppurative appendicitis, with a less mortality than 1 per cent. Professor Morton deserves great credit for publishing the details of his cases, as they satisfactorily show that the patients' deaths were not due to the operation but to the absorption which had begun previously, and confirm my recommendation that cases should be operated on earlier in order to diminish the mortality. I am, Sir, yours faithfully,

J. CRAWFORD RENTON, M.D. Edin.,
Surgeon and Lecturer on Clinical Surgery,
Glasgow, May 24th, 1909. Western Infirmary, Glasgow.

FERGUSSON *v.* MALVERN URBAN DISTRICT COUNCIL: APPEAL OF PLAINTIFF BEFORE HOUSE OF LORDS.

To the Editor of THE LANCET.

SIR,—As the report of this case has been given wide publicity, I should feel much obliged if you could see your way to putting in a short notice to the effect that the Malvern Hydropathic Establishment is still going. Many people seem to have the idea that the house is shut up because they have seen in the papers that Dr. J. C. Fergusson (my father) has lost his action. It is quite a mistake to think so.

The facts of the case are as follows. Four years ago one of the water-supplies of the establishment was contaminated by sewage escaping from one of the Malvern council's sewers. Several cases of typhoid fever followed, and large sums had to be paid in compensation. An action was heard in the Court of King's Bench against the Malvern council, and my father was awarded £7500 damages and costs (January, 1908). The Court of Appeal reversed this verdict on a point of law (May, 1908). As the result I took over this establishment from my father on June 1st, 1908, and he gave notice of appeal to the House of Lords. As you now know, the appeal was dismissed on a point of law last Monday, and the losing of *his* case does not affect *my* carrying on this establishment. It is to correct the misapprehension which exists in the minds of a great many people that I now ask you to print a short explanation of the actual facts of the case. I may add that my father's character has been completely vindicated, the House of Lords having refused to listen to statements based on conjecture without a jot of evidence.

I am, Sir, yours faithfully,

J. N. F. FERGUSSON, M.B., B.C. Cantab.

Malvern Hydropathic Establishment, Great Malvern,
May 26th, 1909.

THE IRISH UNIVERSITIES COMMISSIONS.

To the Editor of THE LANCET.

SIR,—Reverting to my letter of inquiry which you were kind enough to publish with your annotation on May 8th, I trust I may be allowed to inform you that I wrote, as suggested, to the Right Hon. Lord Chief Baron Pallas and received his reply to-day. He states that "the matters referred to are not for the University Statutory Commission to decide," but in the main agrees with your opinion as to the designation by which graduates of the Royal University of Ireland will be entitled to describe themselves in future; but he says that if a graduate of the Royal University of Ireland "makes application to become a graduate of the New Queen's University of Belfast" that University "may, if they think fit, refuse such an application."

Will the new National University of Ireland be compelled to accept such a rejected one? It seems that graduates of the Royal University of Ireland will be in the dilemma of remaining graduates of a university that no longer exists or of describing themselves as graduates of one unborn at the date of their graduation. Truly, it may become difficult for them to impress the public with their legitimacy.

I am, Sir, yours faithfully,

May 20th, 1909. MORIBUND.

THE SOCIALIST MEDICAL LEAGUE.—A meeting of this league will be held in the Holborn Restaurant (Newton-street entrance) on Thursday, June 3rd, at 4 o'clock, Dr. A. Salter, L.C.C., being in the chair, at which Dr. J. Jenkins Robb of Bourneville will open a discussion on the Nationalisation of the Medical Profession.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Frederick Gorringe the Clapham General and Provident Dispensary will receive £1000; the Bolingbroke Hospital, Wandsworth, £5000; and Westminster Hospital and St. George's Hospital about £40,000 each.—Subject to a life interest the Salford Royal Hospital will receive £5000 and the General Hospital and Dispensary for Sick Children, Pendlebury, £2500 under the will of the late Alderman William Robinson of Salford, Lancashire.

ABOLITION OF THE PORT MEDICAL OBSERVATION SERVICE AT ALEXANDRIA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

SANITARY CONTROL OF THE PASSENGER TRAFFIC AT ALEXANDRIA.—INSTEAD OF PROTECTING EUROPE FROM CHOLERA, EGYPT CLAIMS PROTECTION AGAINST EUROPE.—A PETTY AND MISCHIEVOUS ECONOMY.—FIGHTING PLAGUE AND EDUCATING THE BEDOUINS.

NEW conditions have arisen in Egypt with regard to the regulation of traffic from the sanitary point of view. These are not free from danger, for the old regulations do not apply to them. When the International Quarantine Board was instituted it became an authority which certainly did protect Egypt from the importation of plague or cholera from the East. The probabilities are, however, that the keen interest displayed in the safety of Egypt arose from the knowledge that the best way of protecting Europe was to keep these diseases out of Egypt. Now the position has altogether changed. It is no longer Egypt that has to protect Europe, but Egypt that wants to be protected against Europe. So long as the danger was exclusively from the East there was no difficulty, for no European shippers were affected, but the year before last cholera broke out in the Caucasus. Now the Turkish and the Russian members of the International Qnarantine Board hesitate to sanction the imposition of precautions that might prove a hindrance to the trade of their respective countries. Thus those whose mission it is to protect Egypt against infection coming from abroad have material interests opposed to the taking of any measures whatsoever. On the ground that though cholera prevailed in the Caucasus the disease had not reached any of the seaports, the Quarantine Board deferred the adoption of any precautions. This position had not been foreseen when this board was instituted. A mere geographical change in the distribution of disease has altered the whole situation and policy. The board was created to deal with the pilgrims from Mecca, whereas the cholera was in Russia and Turkey. But further, even if this were not the case the conditions of the pilgrimage itself have also entirely altered. Instead of returning by the Red Sea, where they are compelled to land at Tor and all necessary precautions are taken, some of the pilgrims reach the new railway line that conveys them to a Syrian and Mediterranean port. From here those who are returning to Egypt can take a steamer and land at Alexandria, where there is no efficient means of dealing with such pilgrims.

In the face of this situation the English organisers of the Egyptian Public Health Department established at Alexandria a system of sanitary control whioh worked well and elicited expressions of satisfaction and approval from the International Quarantine Board. This consisted mainly of taking the name and address of all third- and fourth-class passengers and keeping them under sanitary observation. Dr. J. Ferguson Lees, general health officer of the Port of Alexandria, forwarded on Jan. 10th last a report on this service to the Director-General of the Egyptian Public Health Department. It was on Jan. 20th, 1908, that the system in question was first applied. Passengers landing from Levantine ports were subjected to medical scrutiny, and those who appeared unwell to a careful medical examination. If a passenger was suffering from an infectious disease or showed symptoms of a suspicious character, he was sent to the hospital. The name and address of all third- and fourth-class passengers were taken and forwarded so that they might be watched for a time when they reached their destination. Thus the danger from persons who had been previously exposed to contagion was greatly reduced. As an instance in point, the case is cited of a native woman coming from Syria during the summer. When she landed she seemed to be in good health but two days later sickened with plague. As she was under medical observation the fact was known at once; she was consequently and promptly isolated, disinfection and the usual precautions ensued, and no further harm occurred.

Another measure consisted in establishing a shipping register in which all matters concerning health were recorded. At first details relating only to Levantine ships were noted, but since February, 1908, all steamers were included. It was difficult, however, to keep in touch with sailing vessels without the use of a steam launch. The boatmen who land the few passengers such ships bring were instructed to disembark them at the passport landing stage. The coastguards and the Custom House officials were called upon to help in seeing that all arrivals should be medically examined. Since Jan. 20th, 1908, 1909 steamers entered the harbour of Alexandria. Of these 897 came from the Levantine and 1012 from other ports. There were also 27 sailing ships carrying passengers from the Levant, and 770 of the steamships from the Levant had passengers. Of the steamships coming from the other ports 579 had passengers on board. Altogether there were 87,299 passengers who disembarked at Alexandria, and of these 52,085 steamship and 210 sailing ship passengers came from Levantine ports. Among these latter 15,565 were first- and second-class passengers. The sanitary authorities had therefore to examine and establish medical supervision over no less than 36,730 third- and fourth-class passengers. 36,730 addresses were, therefore, taken, and of these 32,984 proved to be correct. The missing or erroneous addresses relate for the most part to the earlier period of the organisation. But there was a further difficulty. No less than 7888 only remained at the addresses they gave for a few days and left before the full period of observation was completed. Consequently a proposal was made to render the hotel managers responsible for the further addresses. This service boasts that, after the first three months and when everything was in good working order, at least 93 per cent. of the addresses were found to be correct. The number of each dragoman or porter accompanying passengers is noted and he helps to check the information and address given. These men are only admitted into the passport enclosure on this condition. On most occasions when the address proved incorrect this was due to some mistake rather than to a deliberate attempt to deceive. Such mistakes do not so much matter in a small town or village, as the local authority generally succeeds in finding out the new arrival, but this is not so easy in large towns like Alexandria or Cairo. To render the control more secure it was proposed to withdraw the passport altogether and give a receipt in its stead. The passenger would then have to get his passport back from the board of health of the district where he was going, and by that time the address given would have been verified. This method was tried with good results in regard to pilgrims going to Suez.

There were, however, some passengers who had no address to give. If these were foreign subjects they were sent to their respective consuls for disposal; if Egyptian subjects they were detained by the sanitary authority so that they might undergo their period of observation. For this purpose the quarantine authorities gave the Public Health Department permission to use a portion of the quarantine station at Gabbari. Here from March 10th, 1908, to January, 1909, there were 432 persons detained because they could not give any address or account of themselves. Of the total 36,730 third- and fourth-class passengers coming from the Levant 76 were sent to the hospital. There were among them four cases of small-pox and one of typhus fever, and the others were suffering from various infectious diseases. Undoubtedly, if these sick people had been allowed to wander forth they would have spread disease about, and besides infecting other people the poorer ones among them would have had but little chance of recovering.

On August 1st last quarantine restrictions in regard to cholera were imposed in relation to ships coming from Russia and remained in force until Nov. 3rd, when the restrictions affecting the Balkans and the Ottoman Empire were withdrawn. These restrictions had reduced the number of pilgrims passing through Egypt for the Hedjaz. What this traffic implies is set forth by Dr. Ferguson Lees's report. From August 1st to the end of last year 2521 pilgrims from foreign countries passed through Egypt on their road to Mecca. Among them were 294 women and 92 children of less than 15 years of age. A special difficulty is created by the fact that 200 pilgrims had no money whatsoever and were proceeding the whole way on foot, marching *viâ* the Sinai peninsula and Palestine. Then there were 70 pilgrims walking to Suez

hoping to obtain, by begging, sufficient money to pay for their passage from Suez to Jeddah. These 270 destitute pilgrims came from Tunis, Tripoli, Morocco, and Algeria; 55 of them were French subjects. Of the pilgrims who had money or through tickets 1738 went to Suez by train and 201 were conveyed in a quarantine train after a short detention at Gabbari. This cost the authorities £E.350, and complaints have been made in regard to the outlay. It is suggested that such pilgrims should be stopped, not allowed to proceed farther, but sent back to their respective countries. Or, again, it is urged that the retention of the passports, so that the pilgrims must call for them at the place of destination, is an effective and less costly method of watching these travellers. In such measures as have been taken the quarantine medical officers have helped and have worked in harmony with the Public Health Department. Everything, therefore, seemed very satisfactory. There were, of course, some difficulties remaining. Thus, for instance, passengers who have no luggage manage occasionally to slip by unperceived, and it would facilitate matters if there was but one landing-stage where all the services could be brought together.

The whole of this service organised at Alexandria—that is to say, the medical examination of third- and fourth-class passengers coming from the Levant and countries where there are plague and cholera, securing their addresses, sending information to their places of destination, and the detention of those who could not give addresses—cost about £1800 per annum. It took three months to organise this service, and it was then carried out in a manner that compares favourably with any similar organisation in the world. There are not many sanitary measures that have proved of so much use and yet entail so small an outlay. Nevertheless, the Minister of the Interior has just taken upon himself to suppress this small allowance. It is difficult to understand the motive of such petty economy. The whole experience of Egypt shows, especially in regard to plague, that if cases are promptly reported epidemics can be nipped in the bud. Even when there had been concealment, when once the outbreak was discovered the cases were quickly got in hand. Mr. W. P. G. Graham, the Director-General of the Egyptian Public Health Department, in a report to the Minister of the Interior attributes the improvement realised in dealing with plague to the following measures:—

1. Earliest possible information.
2. Preparation of trained *personnel* for organising hospitals, carrying out disinfection, and managing the "contact" camps.
3. Preparation at convenient spots of the requisite stores and material so that these necessities should be available at the shortest possible notice.

Mr. Graham adds that when information of the earliest cases is obtained "the outbreak was controlled immediately and, as a rule, within the limit of the incubatory period." Then we are given the following figures:—

1905.	3 cases in	2 localities,	case-rate	=	1·5
1906.	412 "	26 "	"	=	15·7
1907.	902 "	81 "	"	=	11·1
1908.	616 "	68 "	"	=	9·0

Up to Feb. 27th, 1909, there were 27 cases in 17 localities, as against 182 in 23 localities during the corresponding period of last year. From this we may gather that plague, even when spread over a larger area, may be so controlled as it invades the different localities that the proportion of cases which actually occur among the populations exposed to the risk becomes less and less. Seeing, then, how much depends on promptitude, the small sum spent in organising the service at Alexandria, so that new arrivals may be watched during the period of incubation, was well spent and should not have been suppressed.

In regard to this question of watching for and instantly reporting cases, there is an official document, Paper No. 4, which says that in 1908 great progress was made in educating the Bedouins on the western edge of the desert. These somewhat wild tribes used to resent all interference. With tact, however, they have been enlightened and now realise the advantage of the measures taken. Instead of hiding their sick and carrying them away to infect other localities, "they settle down in a very surprising manner to the steady routine of declaring the presence of infection and helping in the procedure of isolation and disinfection; and it is largely owing to the number of cases that were discovered amongst these people that the diminution of the incidence of plague in Upper Egypt is less pronounced than it otherwise would have been."

The importance of the above bears not only on the question of dealing with plague, but it demonstrates the possibilities of education. If the Bedouin, the nomadic, the unruly child of the desert, can be brought to surrender personal freedom and consent to segregation and disinfection, surely the quieter and more orderly inhabitants of Cairo could be taught to make proper and decent use of sanitary accommodation if supplied throughout the city when the new drainage scheme is completed. The education of the people in regard to sanitation will not, however, progress with the necessary rapidity if the Government is going to practise petty and vexatious economies. To save £2000 by destroying an admirably organised service, such as the medical observation of passengers disembarking at Alexandria, will certainly discourage and spread dismay among those who are endeavouring to build up organisations capable of coping with such serious epidemic diseases as plague and cholera. There must be some mistake; it is not conceivable that such a decision was really intended or will be maintained.

THE CHARTER OF THE UNIVERSITY OF BRISTOL.

(FROM OUR OWN CORRESPONDENT.)

THE University of Bristol, by its Charter, which in its printed form is a document of 38 foolscap pages, receives the Royal Assent to its existence as "one body politic and corporate," with the right, as such, of transacting business. The visitorial authority of the King and his successors, to be exercised through the Lord President of the Privy Council, is formally stated. The powers of the University are next defined—namely, to grant degrees and diplomas; to provide for instruction, research, and the spread of knowledge; to affiliate and otherwise coöperate with other educational institutions, and particularly to enter into suitable agreements with University College, Bristol, and the Merchant Venturers' Technical College; to form a teaching staff; to institute scholarships; and to license halls of residence.

The form of government prescribed by Charter for the University is of necessity a somewhat complex machine. I will describe it as briefly and simply as possible. Authority is entrusted to certain persons and also to certain representative bodies. The chief office of the University is the Chancellorship. The first holder will be Mr. Henry Overton Wills, a member of the family whose enterprise and liberality have done so much for Bristol in general and the University in particular, and the donor of £100,000, the largest gift ever made, I believe, by any one man to any English university. Next in authority are four Pro-Chancellors, to act in the absence of the Chancellor. These are Dr. Percival, the Bishop of Hereford, who when headmaster of Clifton College had much to do with the foundation of University College, of which he is the President; Lord Winterstoke of Blagdon, formerly Sir William Henry Wills; the Right Hon. Lewis Fry, member of another famous Bristol family, chairman of the council of University College, for which he has worked untiringly since its foundation (he and Dr. Percival are the only surviving subscribers of the original memorandum of its association); and the Right Honourable Henry Hobhouse, one of the council of University College and chairman of the Somerset education committee. The principal academic officer of the University is the Vice-Chancellor, who is *ex-officio* chairman of the Senate. The first holder of this office is Professor C. Lloyd Morgan, LL.D., F.R.S., the present Principal of University College, an office he has held, with the professorship of psychology, since 1887. There is to be a Pro-Vice-Chancellor, but no name is mentioned for this office in the Charter. The first treasurer is Mr. George A. Wills, the Chancellor's son, who has been largely concerned in the organisation of the University.

So much for the chief officers; next come the four governing bodies. The Court is the supreme body, with absolute power within the University, subject to the Charter, the Statutes, and the law of the realm. It has the power of altering its constitution and of amending or adding to the Statutes, subject to the approval of the Privy Council. The first Statutes, which are attached to the Charter in the form

of a schedule, define the nine classes of members who will constitute the first Court. They are tabulated here: (1) the chief officers of the University described above; (2) life members, subscribers of £1000 and upwards to the University or to University College (34 names); (3) representatives of the Bristol city council and of the Society of Merchant Venturers; (4) representatives of the county councils of Somerset, Gloucester, Wilts, Dorset, Devon, and Cornwall, of the borough councils included within those counties, and of such other similar local governing bodies as may be thought fit; (5) persons appointed by the Lord President of His Majesty's Privy Council, and by the Chancellor of the University; (6) representatives of various universities, colleges, and allied institutions; (7) the Bristol Members of Parliament; (8) the Members of Parliament of divisions in the neighbouring counties and boroughs; and (9) certain members of the court *ex-officio* (the Lord Mayor and Sheriff of Bristol, other local mayors, and certain local ecclesiastical and educational authorities). Subsequent Courts will contain two additional classes of members—one academic, the other general.

The Council is the executive body of the University and, subject to the Court and Statutes, will control finance and such other matters as the Court may delegate to it. The first Council will consist of the chief officers of the University, with representatives appointed by the Court, the Senate, Convocation, the Bristol city council, and the Society of Merchant Venturers. In the statement of powers allotted to the Council provision is made for the administration of academic affairs by the Council and Senate acting conjointly. The Senate will control the "curriculum and education afforded by the University" and such other matters as may be referred to it by the Court or the Council. It is to consist of the Vice-Chancellor (chairman *ex-officio*), the Pro-Vice-Chancellor, and the professors. Among its powers is that of formulating schemes and making recommendations for the establishment of "faculties, schools, or departments" of law, theology, fine art, music, agriculture and others, in addition to the four faculties with which the University starts its career. To each of these faculties, arts, science, medicine, and engineering, will be attached a board presided over by the Vice-Chancellor and the Dean of the Faculty, and consisting of the majority of the teaching staff of the faculty. These boards are permanent departmental committees subject to the Senate. Convocation will consist of the chief officers of the University, the members of the Senate, the readers and lecturers, such other members of the teaching and official staff as may be determined by ordinances, and the graduates of the University. It may consider any University business whether referred to it or not, and it may communicate direct with the Court, Council, or Senate. Minutes of the proceedings of the Court are to be reported to Convocation. So much for governing officers and bodies. A word must be added to explain the legislative process of this machine. *Statutes* are relatively fixed; the first Statutes are embodied in a schedule appended to the Charter. Amendments and additions may be drafted by the Council and submitted to the Court, but they cannot come into force without the approval of His Majesty's Privy Council. *Ordinances* are more fluid, for they become operative on the approval of the Court. They are to be framed by the Council, acting in academic affairs conjointly with the Senate. Matters regulated by Statute may be devolved to the control of ordinances by the passage of new Statutes to that effect.

One or two remaining paragraphs of the Charter are of general interest. At least one external examiner is to be appointed for each subject, or group of subjects, in examinations for degrees, examinations for admission to the University not included. Members of the University of all ranks will be free from religious tests and also from sex disabilities. The University can make no "dividend" except in the form of a prize or grant.

In this brief account no mention is made of the details of the various curricula, because they are being organised under the head of ordinances, the particulars of which are, of course, not touched by the Charter. The framing of ordinances is a matter calling for the greatest care and much anxious toil on the part of those concerned. The best antidote to that scepticism which sees in all this work only another example of mountains in travail for the birth of a mouse, is to be found in a long view of the destinies of the University of Bristol. If in its foundation be perceived not only a symptom of the present healthiness and vitality of the British race, but also the evolution of a force which in its fuller development will do great things through and for future generations of Britons, it is our duty to pray for long life and prosperity to the University of Bristol.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Select Vestry: Subcommittee's Report on Phthisis.

AT a meeting of the select vestry held on May 4th, Mr. E. Horrigan submitted the report of the subcommittee appointed by the North-Western Conference Committee, pointing out that, however desirable it might be that there should be combination amongst the unions of the North-Western district for the purpose of providing special accommodation for phthisical patients, no such combination could possibly be brought about otherwise than upon the initiative of the unions which are desirous of combining. Under the existing law it was competent for two or more unions to combine for the purpose of providing such accommodation, should they see that it was to their advantage to do so, but combinations suggested by third parties would have but slight chance of meeting the approval of the unions primarily interested. The subcommittee submitted for the consideration of boards of guardians the following suggestions: First, in regard to the outdoor poor, that every effort should be made to secure hearty coöperation between the health authorities and the guardians in dealing with phthisical cases; that guardians may, by making the grant of additional relief, do something to lessen existing evils; that leaflets containing instructions as to precautions to be taken by patients and advice as to the use of the most nutritious cheap foods be given by relieving officers; that as the chief danger of infection arises from the sputum every precaution be taken against this danger by the provision of pocket spittoons, paper handkerchiefs, and disinfectants; that hopeful cases should be sent for treatment to sanatoriums; that facilities be provided by the guardians for the medical officers to obtain free of cost the bacteriological examination of sputa in suspected cases; and that, in those unions where a grant is made by guardians to the funds of a district nursing association or similar institution, a nurse with special knowledge of the treatment of phthisical cases shall periodically visit and advise the phthisical poor. Second, as regards the indoor poor, it is suggested that special care be taken properly to isolate all cases of phthisis, no consumptive patient being allowed in the general wards of a workhouse infirmary; and that special accommodation be provided in separate wards with plenty of fresh air for all phthisical patients. In the smaller unions shelter tents and temporary buildings may be erected in the workhouse grounds, and in the larger unions special buildings of a more permanent character. These recommendations are to be submitted for the consideration of the North-Western Poor-law Conference.

May 25th.

NEWCASTLE-UPON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Outbreak of Cerebro-spinal Meningitis.

DURING the past two or three weeks several cases of this disease have been observed in Newcastle—up to May 19th, eight in all. These, for the most part, have been met with in the immediate neighbourhood of the city, more especially in poorer localities, in such a distribution as to suggest the epidemic nature of the trouble, but cases have also occurred sporadically, well away from the main distribution and in better social environment. A bacteriological diagnosis has corroborated the clinical signs in some of the cases. The disease has been added to the list of those notifiable for the next three months.

University of Durham.

A meeting of the University of Durham Commissioners was

held in London on May 17th, the Duke of Northumberland being in the chair. They were prepared to hear representations made by parties interested with reference to the draft statutes of the University drawn up by them in accordance with the provisions of the University of Durham Act of 1908.

Royal Victoria Infirmary.

At a quarterly court of governors of the institution, which is advertised in the local papers to be held on May 27th, the governors will be asked to sanction an alteration in the statute concerning the number of surgical registrars, so that the words "four surgical registrars" be altered to read "five surgical registrars." At present there are only two surgical registrars to the institution. To the public it may appear a little anomalous that the governors should be asked to allow, if necessary, the appointment of five such officials when the existing power of making four such appointments has not been utilised.

Workman's Death: Compensation Claim.

At the Durham county court on May 17th his honour Judge O'Connor heard an application from a widow who claimed compensation from a coal company, the employers of her late husband, in connexion with the death of the latter. According to the evidence of the widow, the deceased was 68 years of age. He went to work at 5 A.M. on Nov. 11th, 1908, and returned at 11 A.M. very ill and suffering great pain. He was seen by a medical man and afterwards removed to a hospital, where he died two days later. In cross-examination it was stated that the man had a double rupture and wore a truss; further, that one of the ruptures had been present for 18 years and the other for a considerable time. The house surgeon of the hospital said that death was due to rupture. The evidence showed that the work engaged in on the morning of Nov. 11th included the tilting of a tub of coal which weighed about eight hundredweights. It was submitted for the respondents that there was no evidence of any accident, and in the alternative that if there was an accident death did not arise from it. His honour held that deceased had exerted himself at work, and the result of that exertion was to cause the mischief from which he died. He awarded the applicant compensation to the amount of £273 15*s.* 5*d.*, which sum had been agreed upon.

May 25th.

WALES.

(FROM OUR OWN CORRESPONDENTS.)

Unqualified Dental Practice.

AT the annual meeting of the South Wales and Monmouthshire branch of the British Dental Association held at Llanelly on May 19th Mr. J. Percy Oliver read a particularly instructive and well-timed paper in which he dealt in a practical manner with the subject of unqualified dental practice. The registered dentists of the district included in the area of the branch have for some years been active in putting down this form of dental practice and have achieved a large measure of success. While admitting that police court prosecutions have had a salutary effect, Mr. Oliver is of opinion that a much stronger and more effective weapon is to be found in a county court action for damages by persons who have suffered, as very many undoubtedly have, at the hands of the unskilled and untrained quack. He does not anticipate much relief from additional legislation, though he admits that some good would be done by the enactment of an Anæsthetics Bill which would prohibit the injection of local anæsthetics by unqualified persons. As he very pertinently remarked, a chemist may not sell poisons over the counter unless he adopts certain prescribed safeguards, but anyone may inject the same poison with impunity. But Mr. Oliver anticipates the greatest assistance in stopping the practice of unqualified dentists by the creation of a scheme of State dentists. It is impossible, he says, for the admittedly terrible condition of the teeth of children to continue. The safety of the State is involved, for it will soon be impossible to obtain a sufficient number of dentally efficient soldiers. The only solution will be for the State to see that the teeth of school children are properly attended to. One of the results of a general scheme of school dentistry will be such an improvement in the general condition of the teeth of the nation that the great field from which the unregistered dentists at present draw their victims will be closed to them.

Glamorgan Water Board.

Reference has already been made in THE LANCET[1] to the proposed formation of a water board for the county of Glamorgan. A Select Committee of the House of Commons has had under consideration for more than a fortnight a Bill promoted by the Glamorgan county council having for its object the creation of a board to control the water-supplies of the county. On May 24th the committee expressed the unanimous opinion that the preamble of the Bill had been proved. Although the Bill was promoted by the county council it is not intended that that body shall constitute the board, which it is proposed shall be formed of representatives of the 30 local sanitary authorities who are concerned with the administration of the areas over which the board will have control so far as water-supplies are concerned. The Rhondda urban district council will have three representatives; the urban councils of Pontypridd, Mountain Ash, and Barry will each have four; and the other councils will each have two. In addition, the county council will be represented on the board by three members. The board will have power to buy up existing water undertakings, and a provisional agreement has already been come to for the purchase of the largest and most important, that of the Pontypridd Waterworks Company whose mains supply two-thirds of the Rhondda valleys and the town of Pontypridd. The water will be supplied in bulk to the local authorities who will themselves undertake the work of distribution. Where a distributing plant has to be purchased by the board it will be re-sold to the local authority. In taking over the existing sources of supply and the existing powers the board will start with a very large provision of reservoirs and a still larger provision of powers. Altogether, between the works actually constructed, works in process of construction, and works powers for which will be transferred to the board, there will be actually or potentially a capacity of 1,100,000,000 gallons of water. The three county boroughs of Cardiff, Swansea, and Merthyr Tydfil, in which ample provision has already been made for the needs of the inhabitants, are not included in the area which will be controlled by the new board.

Cerebro-spinal Meningitis in Swansea in 1908.

At the last meeting of the West of England and South Wales branch of the Society of Medical Officers of Health the medical officer of health of Swansea (Dr. D. J. Morgan) gave an account of 63 cases of cerebro-spinal meningitis which occurred in the town during 1908. Although 26 of the cases occurred in the month of April the disease does not appear to have been at any time epidemic. Of 18 patients treated in the isolation hospital eight (or 44 per cent.) died, and of the 45 who were nursed at home 42 (or 93 per cent.) died. The treatment of those admitted to the hospital consisted, in addition to excellent nursing, in applying ice-bags to the head and keeping the patients on a milk diet reinforced with brandy. Repeated lumbar puncture, daily when necessary, was also resorted to. Dr. Morgan drew special attention to the fact that no serum or antiseptic of any kind was injected, and he expressed the opinion that the most effectual method of treatment was by simple puncture and the withdrawal of spinal fluid until a negative pressure was shown by the piston rod of the syringe being sucked back.

May 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Triple Qualification in Scotland.

A CORRESPONDENT to a Scottish newspaper draws attention to the anomalous state of affairs existing at present in some departments of medical education in Scotland. As is well known, the Royal Colleges of Physicians and Surgeons in Edinburgh and the Faculty of Physicians and Surgeons in Glasgow hold examinations periodically, and grant diplomas which allow licentiates to register and practise as physicians and surgeons in any part of the British Empire and also to

[1] THE LANCET, April 17th, 1909, p. 1137.

enter the military, naval, or Indian medical services. This diploma is generally known as the triple qualification, and students who intend to practise by its means are nominally allowed a free hand in regard to the places where they may take out their classes. Theoretically they may take out their classes in any medical school in the United Kingdom, but there is a very important stipulation—viz., that the class tickets certifying attendance in each course must be signed by lecturers who themselves are licentiates or Fellows of the Royal Colleges of Edinburgh or the Faculty of Glasgow. This means that classes held by professors or lecturers who are University graduates but are not members of the licensing bodies are not at present recognised as qualifying for examination purposes. The removal of this anomaly lies entirely with the Royal Colleges and the Faculty, and it is likely, the trend of matters in medical education being such as it is, that some alteration will shortly be made in these regulations.

Research in Cerebral Pathology.

The Crichton Royal Institution in Dumfriesshire is one of the principal asylums for the insane in Scotland, having accommodation for 900 patients. Last February Dr. C. C. Easterbrook, the physician-superintendent, submitted to the directors a draft scheme for the establishment of a research laboratory in connexion with the asylum, to be entirely under the management of the directors, but not to have interests conflicting with those of the Scottish Asylums' Laboratory in Edinburgh. The directors have now established three Crichton Fellowships for the promotion of psychiatrical research. The Fellows will be required to devote their whole time to the research work of the Crichton Institution, and will be under the immediate direction of the physician-superintendent. The Fellowships will be tenable for one year, but may be renewable from year to year, and each will be of the annual value of £250 with board and residence. They are open to men holding British qualifications who have already published original work in science or medicine. Applications must be lodged with the physician-superintendent before June 30th.

Montrose Asylum Management.

A special meeting of the managers of the Montrose Royal Lunatic Asylum and Infirmary was held on May 17th to consider the suggestions made by the General Board of Lunacy anent representation and to come to a resolution thereon. The motion as follows was carried by 23 votes to 5:—

The asylum managers, while adhering to their position, in which they understand they are confirmed by the testimony of the General Board of Lunacy, that no change in the charter is called for on account of the management, past or present, of the asylum, are willing to consent to a modification of their constitution, and on such lines as may be agreed upon.

In committee the managers appointed five of their number to get every information possible, with a view of amending their constitution.

May 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Ireland and Tuberculosis.

ON May 20th, when opening a Tuberculosis Exhibition at Rathmines, Lady Aberdeen quoted a letter from Sir Robert Matheson, Registrar-General for Ireland, announcing that the mortality rate from all forms of tuberculous disease in 1908 in Ireland is down one decimal point. In each of the three years 1905, 1906, and 1907 the rate per 1000 of the population was 2·7, while last year (1908) it had fallen to 2·6. In supporting a vote of thanks to Lady Aberdeen, the Registrar-General said that the decline in the returns was due, at least in some respects, to the exertions she had made during the last two or three years to stay the progress of the disease.

Health Homes of the Women's National Health Association.

There is considerable agitation against the Health Home at Sutton, the institution to which the Women's National Health Association proposes to send its early tuberculous or pre-tuberculous cases, and undoubtedly some of this agitation rests upon a slender foundation or is dictated by undue apprehensions. Lady Aberdeen has given a guarantee that no advanced cases will be sent to these Health Homes, and that any patients sent to them will be made to observe all the special precautions which are usually advised to safeguard the community. None the less a deputation from Sutton has waited upon Her Excellency and protested against the proposal to erect a Health Home in their midst.

Dublin Hospitals Tuberculosis Committee.

A meeting of this committee, presided over by Sir John Moore, was held on Friday, May 21st, at 76, Grafton-street. Present: Lady Aberdeen, Sir Arthur Chance, Dr. M. F. Cox, Dr. H. C. Drury, Dr. A. R. Parsons, Dr. G. Peacocke, Dr. Percy Kirkpatrick, Dr. J. Lumsden, and the honorary secretary, Sir William J. Thompson. A report was rendered of the three months' work of the two special nurses appointed to look after poor consumptive patients in their own homes. These nurses were placed at the services of the committee by the Women's National Health Association, and the good they have been able to effect is already quite large. The amount of relief given to the parents and their families in the way of nourishment, clothes, beds, &c., reflects the greatest credit on the Samaritan Committee, whose work in this direction is so commendable and practical.

The Belfast University Commission.

On May 18th a very influential deputation from the Municipal Technical Institute of Belfast waited upon the Belfast University Commission to hear what proposals the Commission had to make with respect to the coördination of education as between the University and the Technical Institute. After a friendly discussion, the Commission expressed the view that it did not intend to recommend the building and equipment of a technical institute in connexion with the University, more especially having regard to the admirable way in which the technical work is carried on in Belfast by the institute. The question of giving the institute direct representation upon the Senate of the University was also discussed, and it is stated that steps will be taken in the near future to suggest to the Senate the advisability of conceding the request of the Technical Institute in this matter. The committee of the Technical Institute is clear in its attitude that there cannot be coördination without representation, and that unless this request be complied with, the coördination scheme will not be a success. At a meeting of the Belfast library and technical instruction committee held on May 20th, a motion was adopted approving of the terms of the report of the deputation to the effect that a scheme of coördination would not be effective and that the interests of the Municipal Technical Institute would not be sufficiently safeguarded, unless the library and technical instruction committee had representation on the Senate. The Technical Institute committee is willing to place representatives of the University on its committee, but it claims in return representation on the University Senate. A deputation also waited on the Commission from the medical staff of the Mater Infirmorum Hospital asking that that institution should be recognised as one from which the Belfast University would receive certificates of attendance from students; also that the staff should be recognised as clinical teachers and should get a share of the external examinerships. The deputation was most courteously received, and it was suggested that the staff of the Mater Infirmorum Hospital might, in rotation with other institutions, be made clinical lecturers and examiners following the new method adopted in Glasgow. The statutes of both the two new Irish Universities are now on the table of the House, and have been published in the newspapers. It is expected that the Royal University will be dissolved in time for the two new Universities to start next November.

May 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Death of Dr. Ernest Besnier.

FRENCH medicine has sustained a heavy loss by the death of Dr. Ernest Besnier, which occurred on May 15th. He was by universal consent acknowledged as the leading dermatologist in France, and earned not only the esteem but the admiration of the whole scientific world. Born at Honfleur in 1831, he became an *interne* at the hospitals in 1853 and

graduated doctor in 1857, his thesis being written on Intestinal Obstruction. He was elected physician to the hospitals in 1863 and for the following ten years devoted himself to general medicine and hygiene. But after his appointment to the Louis Hospital in 1872 he devoted himself entirely to dermatology. In 1880 he was elected a Member of the Academy of Medicine. Together with Dr. Doyon he edited a French version of Kaposi's lectures on Diseases of the Skin (1881), and in it he analysed and compared the work of the Vienna school of dermatology with that of the French school. The Annals of Dermatology were founded by him in collaboration with Doyon.

Poisoning by Star Anise.

At a meeting of the Society of Forensic Medicine held on May 11th M. Balthazard and M. Ogier communicated an account of a family of four persons who were poisoned. After dinner all the four had a glass of infusion of star anise (*badiane*). During the night every one was attacked by vomiting and loss of consciousness, which necessitated their removal to a hospital. Examination of the remains of the food showed nothing upon which suspicion could be fixed, but it was ascertained that the infusion of anise had been made some 50 times as strong as usual. It is known that essence of star anise taken in an overdose is capable of producing symptoms of poisoning, together with alternate attacks of excitement and depression, features which were common to all the patients in this case.

Alcohol and Tuberculosis.

At a meeting of the Academy of Medicine held on May 11th M. Bertillon said that in his opinion alcohol was the chief factor in the incidence of tuberculosis. This had been suggested for some time, M. Lancereaux having declared in set terms that "alcohol makes the bed of tubercle." M. Bertillon supplied a demonstration of his view in two charts which he exhibited, the one showing the distribution of tuberculosis and the other the consumption of *eau de vie*. These two charts tallied. It must be remembered that the consumption of *eau de vie* is taken and not of wine, which is a very different matter. *Eau de vie* is consumed almost exclusively in the beer and cider drinking districts and not in the wine districts. And these latter show infinitely fewer cases of tubercle than do the former—namely, Normandy and the districts of the north and east.

Chronic Appendicitis and Cancer of the Appendix.

At the same meeting of the same society M. Richelot said that appendicitis was really a part of a general morbid condition such as the auto-infection of Gilbert and Lereboullet. In many cases this is the only affection from which the patients are suffering and if they are operated on they are completely cured. Sometimes, however, an affection is found which was unsuspected and in operating for appendicitis the surgeon discovers a cancer of that organ. M. Richelot then gave the details of a case of this kind which had come under his care, the patient being a young woman, aged 25 years. He insisted on the importance of cylindro-epitheliomata which are engrafted on a chronic appendicitis and which grow quite unsuspected. Although cancer of the appendix hardly ever spreads yet such a growth should always be removed, all the more as there is seldom or never any recurrence.

Bier's Method in the Treatment of "White Swellings."

At a meeting of the Society of Surgery held on May 5th M. Chaput said that he had used Bier's method in the treatment of so-called white swellings in a fairly large number of cases. He had taken careful notes of 14 of the cases, of which he gave the details. In these particular cases he had used compression with a gauze bandage for 12 hours per diem and had employed no other treatment. In one case, that of a woman suffering from a white swelling of the back of the hand, a cure had been obtained in one month. Two other similar cases, two cases of tuberculous synovitis, two white swellings of the elbow, one of which had a sinus leading down to the joint, one tuberculous osteitis of the tarsus, and one white swelling of the ankle were perfectly cured in a few weeks. M. Chaput, although quite convinced of the efficacy of Bier's method employed alone, admitted that other therapeutic methods might be simultaneously employed. At the conclusion of M. Chaput's speech various other members gave their results. M. Delbet said that he had tried the method in tuberculous cases in his wards and had either obtained no results or results which were harmful, and, moreover, he considered that if surgical treatment had been employed good would have been done. M. Arrou had used the method for four years in cases of white swelling, both fistulous and otherwise. The fistulous cases had markedly improved, but in not a single one of the others was there any improvement. M. Routier had tried the method in two cases without success, and M. Tuffier had after two years' trial given up the method because he had never found any favourable results accrue.

May 25th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Radiographic Diagnosis of Pulmonary Tuberculosis.

AN interesting discussion on the value of radiography in the diagnosis of incipient tuberculosis of the lungs took place at a recent meeting of the Berlin Medical Society. Professor Wolff said that the favourable opinion on the value of radiography for the diagnosis of incipient tuberculosis expressed by him at the Roentgen Congress in 1905 had since that time been confirmed. In the initial stage of tuberculosis of the lungs dark spots are visible in the photograph showing either as one or two foci or in some cases more widely diffused. In the later stages of tuberculosis radiography is valuable for ascertaining the seat and the extent of the disease. Even functional troubles of the lungs may be diagnosed on the radiographic screen. Professor Wolff showed a series of lantern slides in which shadows could be seen at the apex and other parts of the lungs. The usual examination of the lungs by auscultation and percussion had in some of these cases failed to establish the presence of tubercle, but the diagnosis was confirmed by the injection of tuberculin; on the other hand, a positive reaction after an injection of tuberculin was always confirmed by radiography. In the discussion Professor Grawitz pointed out that a shadow at the apex of the lungs was not at all a definite proof of the presence of tuberculosis. Cases of this kind where the diagnosis is not at all certain are sometimes sent to sanatoriums and after a short stay there are reported as "cured." In this way the statistics of "cures" in sanatoriums become unduly favourable. Auscultation and percussion of the lungs have the advantage that they may be carried out at any time and without a special apparatus. Professor von Hansemann was of opinion that the shadow in the lungs may sometimes be caused by deposits of coal in the lungs or the bronchial glands. Professor Goldscheider has often found that the radiographic examination was in accordance with the clinical symptoms. He drew attention to the fact that in tuberculosis infiltration of the apex of the lungs precedes the catarrh, so that the percussion may give a dull sound, whilst auscultation is negative. He wondered that the marked alterations in the pulmonary tissue revealed by Professor Wolff's lantern slides had not been diagnosed by auscultation and percussion.

The Influence of Hereditary Alcoholism on the Ability to Suckle.

At a recent meeting of the Society for Social Medicine and Hygiene Fräulein Dr. Agnes Bluhm read a paper on the influence of hereditary alcoholism on the ability to suckle infants. She said that, according to the researches of Dr. Bunge, the alcoholism of the father at the time of fecundation affected for the worse the germ cells of the fœtus so that the mammary glands of the female offspring became stunted in growth and disabled for suckling. This opinion does not seem to rest on very firm ground. In Sweden, in Silesia, and in the Palatinate, where alcoholism is prevalent, the percentage of suckling women is relatively great. Dr. Bluhm had made a collective investigation and found that of daughters of drunkards 64 per cent. were able to suckle freely, whilst in 14 per cent. the women had suckled the first but not the second and following children. She had further ascertained by experiments on rats fed with alcohol that the mammary glands of the female progeny were quite normal.

May 24th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Health of the Queen-Mother.

AT the sitting of the Chamber of Deputies on May 21st a republican member incurred from the President a severe rebuke for his attack on the Dowager Queen Margherita, whom he charged with devoting extravagant sums to religious institutions and religious education—a rebuke which evoked loud expressions of approval from the House. What accentuated these expressions was the fact—seemingly ignored by the offending orator—that the Queen-Mother had a few days before been so seriously indisposed as to require at her bedside the attendance of Dr. Guido Baccelli to assist Her Majesty's regular consultants, Dr. Quirico, the "medico di Corte," Professor Bastianelli, and Professor Marchiafava. Queen Margherita, as stated in THE LANCET of April 24th, p. 1215, had for some time been suffering from facial neuralgia consequent on influenza, which had been preceded by physical and mental exhaustion due to Her Majesty's exertions on behalf of the survivors of the Siculo-Calabrian cataclysm. The pain, somewhat mitigated in response to treatment, had come to involve the cervical muscles, causing increased suffering, with privation of the nights' rest, and so, in compliance with the wish of the consultants referred to, Her Majesty required the presence of her old friend (for many years in attendance during the graver illnesses of the House of Savoy) Dr. Guido Baccelli. The latest bulletin, it is gratifying to find, announces a distinct mitigation of the symptoms, to be followed, we may hope, by steady progress towards convalescence and complete restoration to health.

Endemic Cretinism.

In the April of last year Dr. V. Tedeschi, who holds the chair of Clinical Pædiatry in the Paduan School, delivered a lecture at the "Istituti Clinici di Perfezionamento" (Post-graduate Clinical Courses) at Milan, in which he broached the idea of an organisation on a national scale to combat "cretinismo endemico"—one of Italy's many scourges. His proposal was at once accepted with favour and alacrity by the profession, and a committee, constituted *ad hoc*, was formed under the presidency of the Senator Luigi Mangiagalli of Milan. Seizing the occasion of the Congress of Internal Medicine, which holds its nineteenth meeting next October in the Lombard capital, the Senator Mangiagalli has taken steps to enlist the good offices of that Congress in the "Anti-Cretinism Crusade," and accordingly we may expect to see held, coincidently with the greater Congress, a "Congressino" (sub-congress) for the discussion and adoption of measures for carrying on that much-required campaign. Dr. Tamburini, who holds the chair of Clinical Psychiatry in the University of Rome, has undertaken to draw up a report on the prevalence of endemic cretinism, and considering the experience and skill of that authority on medical psychology, we may look forward to an important discussion on a highly interesting theme. One of the participants in that discussion will (it is understood) be Dr. Arturo Morselli, *privat-docent* in Mental Diseases in the University of Genoa, whose recent volume on "Tuberculosis in the Etiology and Pathogenesis of Nervous and Mental Maladies" is a mine of information and induction on such maladies in general and on cretinism in particular.

Pharmaceutical Reform.

A Bill for protecting the pharmaceutical profession against the intrusion of unqualified interlopers is now before the Italian Lower House, and Signor Facta, Under Secretary of State for the Home Department, is in charge of it. Reform in that sense comes not a moment too soon. Owing to the laxity of legislation, pharmacy has too often been practised by adventurers who are little better than amateurs and whose mistakes lead to disastrous consequences, as the daily press all too vividly puts in evidence. The ease with which deadly poisons can be procured is a fertile source of suicide, among other sinister results—"pastilles of corrosive sublimate," for example, obtainable "across the counter," without the formality of a medical prescription, having been used with lethal effect the other day by a female domestic in aristocratic service in Milan. Not only so, but, as the English-speaking practitioner is well aware, the drugs dispensed at pharmacies of more pretension than qualification, even in the larger towns, do not yield the results legitimately to be expected from them—not a little of the quinine, for instance, sold in Italy being adulterated with cinchonidine in the proportion of 60 per cent.! Pressed for an assurance that the Bill would soon be placed on the Statute Book, Signor Facta replied that it would be submitted to the House "without delay." It is to be hoped that his promise will be in keeping with his name, and that "verba" will ere long be translated into "facta"!

The Casualties Incident to Labour and Industry: International Congress in Rome.

Preceded by a reception yesterday afternoon (23rd inst.) in the Palazzo Sciarra, Rome, at which the foreign delegates, the "reporters" (*relatori*) of the various sections, and the members of the International Committee met in pleasant converse, the Congress opened its proceedings to-day in the Capitol, the Hall of the Horatii and Curiatii being well filled by a brilliant audience. Dr. Salvatore Ottolenghi, professor of legal medicine in the Roman School, president of the organising committee, welcomed the congressisti, among whom the leading Powers of Europe were represented, in an effective discourse which dwelt on the supreme importance of the topics which had brought them together. Among these will be discussed: (1) the organisation of the medico-chirurgical service for the cure and surveillance of the lesions incident to labour and industry; (2) the organisation of the medico-legal service in the matter of such lesions and of the criteria to be observed in diagnosing and in dealing with them; (3) the ascertainment and prognosis of the nervous complications arising out of the lesions in question; (4) estimate of the capacity of the operative for work before and after lesion; (5) what influence the forms of indemnification exert on the evolution of post-traumatic nervous disorders; (6) statistical conclusions, from the medical point of view, to be derived from the application of the law on industrial and labour casualties; and (7) functional rehabilitation of injured limbs (*arti traumatizzati*). The discussion of these in the various sections and the several "orders of the day" proposed and carried in the sequel will be laid before the readers of THE LANCET in an ensuing issue.

May 24th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The New Stomatological Clinic.

I MAY claim without exaggeration that the Budapest clinics are among the best-equipped institutions of the kind on the continent. This is not to be wondered at if we consider that most of the clinics of the University of Budapest have been built and furnished within the last four years. Foreigners who visit them always speak in terms of praise both of the buildings and of their arrangements. The latest addition to these is the Stomatological Clinic, which was built in 1908 and was opened on May 14th in the presence of the Minister of Instruction, other representatives of the Government, and the professors of the University. The clinic consists of three buildings—one devoted to the preliminary teaching of stomatology, the second to the Stomatological Clinic, and the third to treatment. The arrangement of the single rooms is very convenient. From one side of the lecture-room opens the operating theatre, from the other side the rooms of the professor, and the well-furnished library. The operating theatre is in close neighbourhood with the sterilising, anæsthetics, and x-ray rooms. On the third side of the lecture-room the out-patient department can be reached. In a separate building are located the technical laboratory, the technical experimental laboratory, and the museum. In-patients are accommodated in a third building. The cost of the buildings with their equipment and instruments installations amounted to £30,000. The director of the institute is Professor Arkövy, who has studied stomatology for over 30 years.

The Death of Professor Klug.

The Hungarian medical world is lamenting the death of Dr. Nandor Klug, professor of physiology. He was apparently healthy up to his last day, although he was 64 years of age. He died from apoplexy when rising from

bed on the morning of May 15th. Professor Klug was born in 1845 in Kotterbach, Hungary. He began his studies in Miskolcz and continued them at the Universities of Budapest and Vienna. In 1871 he became assistant at the physiological clinic of Professor Jendrassik, and he was promoted to the post of lecturer on physiology in 1873. In 1878 he became an ordinary professor of physiology at the second Hungarian University in Kolozsvar. Hence he was translated in 1891 to the University of Budapest, where he became one of the most strenuous workers in advancing medical knowledge in Hungary. His investigations into the auto-digestion of the stomach were universally appreciated by physiologists. He wrote a large work on Metabolism which has been translated into several foreign languages. His merits were acknowledged in the highest quarters, for H.M. King Francis Joseph had conferred on him the rank of "Court Adviser" (Hofrat).

The Sixteenth International Medical Congress at Budapest.

Members of the Congress will be supplied with the following publications free of charge. From the office of the Ministry of Public Instruction: "The Medical Clinics and Institutions of the Budapest and Kolozsvar Universities" (published in the French language). From the office of the Ministry of Internal Affairs: "Public Health in Hungary," "Hospitals," and "Defence of Children." From the City of Budapest: "Budapest in Pictures." These books themselves represent a considerable value and should help to propagate a knowledge of the state and extent of humanitarian institutions in Hungary.

May 22nd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Death of Dr. L. B. Durocher, Montreal.

Dr. Louis Benjamin Durocher died recently in Montreal in his 80th year. He was about the last of the strenuous champions of the Victoria School of Medicine in the great conflict of that institution with Laval University a good many years ago. The Montreal School of Medicine and Surgery was affiliated with Victoria University, Coburg, Ontario (since removed to Toronto), and when Laval proposed the establishment of a branch of that University in Montreal, with a medical faculty, they were met with the most strenuous opposition at the hands of the Montreal School, which was patronised and defended by some of the most celebrated practitioners in Montreal and throughout the Province of Quebec. At their head was Dr. Durocher, who held out for many years in his contention that the establishment of Laval's medical faculty was a usurpation of the rights of the local medical school. In the end Cardinal Taschereau and the friends of Laval triumphed. Dr. Durocher bowed to the inevitable, but in a short time thereafter he was appointed Dean and President of the Laval Medical Faculty, a position he held up to 1892. He has bequeathed his valuable property in Montreal to Laval University. Its value is about $40,000. The late Dr. Durocher obtained the degree of M.D. at Coburg or Victoria University in 1853 and practised for 17 years in Terrebonne, Province of Quebec, moving to Montreal in 1870, where for over 30 years he was one of the city's best-known physicians.

The Medical Curriculum in Quebec.

An Act has just been passed by the Quebec Legislature which lengthens the period for medical study in that province from four to five years. The Bill was promoted by the College of Physicians and Surgeons of that province. All the physician members of the legislature strongly supported the measure. It was opposed by 13 members of the legislature and supported by 46.

The Hospitals and Charities of Ontario.

According to the thirty-ninth annual report of the Hospitals, Refuges, and Orphanages of Ontario for the year ending Sept. 30th, 1908, there are in that province 69 hospitals, 34 refuges, 30 orphanages, three homes for incurables, two convalescent homes, two Magdalen asylums, and 28 county houses of refuge receiving governmental assistance and under governmental inspection. The number of the patients in the hospitals proper on Oct. 1st, 1907, was 2935. The number of patients admitted during the year was 41,696, whilst the number of births in the hospitals during the year was 2,340, making the total number under treatment during the year 46,971. The above figures do not include those who received treatment and medicine as outdoor patients during the year. The total number of deaths amounted to 2748; the percentage of deaths to the number under treatment was 5·85, and the total number of days spent in the hospitals was 1,034,591. The Government grant to hospitals amounted to $146,268.08; the amount received from all sources was $1,278,000.16, and the total expenditure $2,721,524.28. The average cost for each patient per day worked out at $1.21. In the Province of Ontario a provincial grant is made for all patients in a hospital during the first 10 years of its existence at the rate of 20 cents per day, irrespective of the sums contributed by the patients themselves. After a hospital has been in existence for 10 years the grant is paid only for patients for whose maintenance $4.90 per week or less is contributed. In all cases the limit is 120 days. Children over one year and under 12 years of age are allowed for at the rate of 7 cents per day. The grant to Sanatoria for Consumptives will for the coming year be $3.00 per week for all patients for whose maintenance $4.90 per week or less is contributed. The inspector, Dr. R. W. Bruce Smith, in this report refers to the undesirable immigration class, which during the past year has cost the hospitals and public charities of the province many thousands of dollars to provide for people who should never have been allowed to embark for this country.

A New Canadian Medical Journal on Dominion Registration.

When a couple of years ago that great North-west country of Canada was divided up into two provinces, Alberta and Saskatchewan, the medical men of each province promptly organised provincial medical societies. That the Saskatchewan Provincial Medical Society was to prove an important factor in the medical life of the West was soon apparent, and its progress early manifested itself in the establishment of a journal to be the official organ of its society. It has set an example to provincial medical societies in the older provinces by its enterprise and enthusiasm in the conduct of this journal. The April number dealt editorially with the broad question of Dominion Registration, failing which it advocates reciprocity for the West, including Manitoba, Saskatchewan, Alberta, and British Columbia. The revival of this important question of Dominion registration by the West is significant, for it is the question with which the Canadian Medical Association struggled from the date of its inception at the confederation of the original four provinces of Canada, until the Canada Medical Act ultimately was placed on our Statute Books, mainly through the efforts of Dr. Roddick. The matter is to be brought up again by Dr. Roddick at the Winnipeg meeting of the Canadian Medical Association in August, and no doubt efforts will be again made to induce the provinces of Quebec and Ontario to join in the demand for inter-provincial registration throughout Canada.

New Hygiene Society.

A Canadian branch of the International Congress of School Hygiene was recently established in Toronto in connexion with the annual meeting of the Ontario Teachers' Association. Sir James Grant, M.D. (Ottawa) was elected President of this new society, and in addressing the meeting on the subject of the Life of our Young Nation, said that length of years was not of so much importance as physiological age. He said that the average length of life is greater in cities to-day, chiefly due to the better care of infants. More people died from over-eating than from under-eating, and man should not treat his stomach as a mere machine. Alcohol and crime, alcohol and lunacy, alcohol and poverty have a remarkable connexion. The speaker considered that the greatest of all our national assets was the health of the people. Dr. C. J. O. Hastings (Toronto), chairman of the Milk Commission of the Canadian Medical Association, whose committee is prosecuting an active campaign towards securing pure and clean milk throughout Canada, read a paper before the society on the danger of children contracting tuberculosis from milk. Dr. William Oldright, professor of hygiene in the University of Toronto, was elected an honorary President of the society, with Dr. Helen MacMurchy, of Toronto, secretary.

New Brunswick Medical Act.

An Act respecting the registration and qualifications of

physicians and surgeons in the Province of New Brunswick is before the legislature of that province. It is to take the place of the old New Brunswick Medical Act, and bears the same title. It provides that all registered physicians shall constitute the New Brunswick Medical Society, and that the Council of Physicians and Surgeons of New Brunswick is to consist of nine members elected from the larger society, three each year for a term of three years. A member can be removed from the Register for cause by a judge of the Supreme Court of the province. The Act will require a four years' course in medicine with attendance at some recognised University, with sessions of not less than six months each. For not less than twelve months each applicant for licence to practise shall attend upon the general practice of a hospital under the charge of not less than two physicians and two surgeons and containing not less than 50 beds. It further provides (referring, no doubt, to osteopaths, homœopaths, &c.) that in the event of any person applying for admission as a practitioner of any system of medicine, a majority of the registered practitioners of the association shall be allowed to appoint an examiner or examiners on the particular theories of that system with regard to materia medica, pharmacy, and therapeutics, but if such registered practitioners should neglect to appoint such examiner or examiners, the Council shall have power to appoint the same. Registration under this Act will cost $40.00, and the annual fee will be $1.00 for registration.

Canadian Hospital Association.

The third annual meeting of the Canadian Hospital Association was held recently in Toronto under the presidency of Dr. W. J. Dobbie, of the Weston Sanatorium for Consumptives, Toronto. Numerous papers were read and discussed. Dr. D. Campbell Meyers (Toronto) read a valuable paper on Neuropathic Wards in General Hospitals. He stated that the Government of Ontario granted $5000 per year for the furnishing and equipping and maintenance of these wards. A very few years ago patients suffering from nervous depression in this province were treated in general wards, where they were regarded as a nuisance. Mr. E. F. Stevens, a hospital architect of Boston, said that the United States owed much to Canadian nurses, as one could scarcely visit a hospital in that country without finding Canadian nurses in charge. In one hospital he had visited he had found a British flag in almost every room. The superintendent of this same hospital told the speaker that about 90 per cent. of the nurses were Canadians. The association elected the following officers: President: Mr. H. E. Webster, Royal Victoria Hospital, Montreal. First Vice-President: Dr. D. Robertson, Ottawa. Secretary: Dr. J. N. E. Brown, superintendent, Toronto General Hospital, Toronto.

May 10th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Value of Quinine in Malaria.

A STRIKING report on the value of quinine as a means of protection in malarial epidemics has been prepared by Lieutenant-Colonel G. F. W. Braide, I.M.S., Inspector-General of Prisons in the Punjab. Colonel Braide bases his report on the contrast between the health of prisoners in the jails and that of the general population of the Punjab during the late epidemic of malaria. It is calculated that about 90 per cent. of the population of the province suffered one or more attacks of malaria during the four months of last autumn, and that 50 per cent. were constantly sick, while it is probable that half a million people succumbed to malaria during the year. In the jails malaria affected only 10 per cent. of the inmates, as against 90 per cent. of the free population. In Mianwala 33 per cent. of the population applied for relief at the local hospital, probably a mere fraction of the number who suffered from the disease, while in the jail only 1 per cent. was affected. In the schools of Ludhiana from 85 to 88 per cent. of the scholars absented themselves owing to malaria; in the jail only 3·84 per cent. suffered at all. While allowing some credit to the superior sanitary conditions of jails and in some cases to mosquito campaigns, Colonel Braide is convinced that the real cause of immunity from malaria in jails was the steady dosing of the prisoners with 15 grains of quinine per week. In Lahore central jail there were 389 cases of malaria during the four months; the explanation was that the medical staff was insufficient to carry out effectively the quinine treatment. On the other hand, what care and thorough belief can do is shown at Hissar, where with a daily average of 186 prisoners only one case was treated for ague, and the medical officer says this man missed his dose of quinine on admission and actually apologises for its occurrence. Hissar jail gave a 10-grain dose to every prisoner on admission throughout the year, and 15 grains every seventh day during the autumn months, with the result that one case of ague alone was recorded during 12 months. Colonel Braide personally investigated this record and states that he could not shake it; its importance, he says, "lies in the fact that it brings out in the clearest manner this most important deduction, *take quinine systematically and one is absolutely malaria proof.*" Colonel Braide adds that the essential factor is that the dose should be taken systematically on definite days throughout the four months August, September, October, and November, and if immunity is secured during that period no man need fear malaria during the remainder of the year. The cost of the treatment is trifling; two pice (halfpenny) packets a week purchased from the post-office, he thinks, are sufficient to render a man immune (this means an expenditure of eight annas per annum). He urges that it is the duty of the administration by every means in its power to make these facts known and to save the province from the huge mortality that hinders its progress.

The Health of Bombay.

The importation of cholera from Nasik continues in a steady stream. Of 97 deaths from that disease in one week 73 were imported cases from Nasik and other places; and these figures show clearly the need of isolating the centres of infection. Even with this unwelcome addition the mortality returns are unusually low and compare very favourably with past records; plague has also decreased. This leads one to hope that the next quarterly report of the executive health officer will be satisfactory, for, with the exception of cholera, the improvement in health of the city continues. But there is no occasion as yet to relax any efforts in the campaign against plague. The extent of the operations against rats, which form a most important part in the campaign, is probably not generally known, but a bag of 101,960 rats caught in three months ought to impress those who think that the rat receives too little persecution. Unfortunately the usual Bombay story is told of inoculation; it was indeed pressed during the past quarter, but people still continue sceptical about its protective value, and it was not sought as largely as could be desired; the result was a smaller number of inoculations performed than in the corresponding quarter of last year. This is not as it should be, and we trust that the Indian press will renew its efforts in the cause of inoculation. The Indian publicist has in that direction such an opportunity of doing good in India as has seldom been presented to anybody, and the apathy of the natives ought to goad him on to fresh efforts.

Plague.

The plague returns for the week ending April 17th show 4594 deaths, compared with 4419 in the week preceding. Bombay Presidency reports 808, Bengal 227, the United Provinces 757, the Punjab 2260, Burma 87, the Central Provinces 105, and Rajputana 325.

Insanitary Milk.

Captain W. Glen Liston, I.M.S., lecturing in Bombay recently, drew attention to the insanitary condition of the Bombay milk-supply. Indeed, we have to go to sewage to find a fluid at all approaching Indian milk in microbial wealth. It may surprise some to learn that an average sample of Bombay milk contains more than ten times as many living bacteria as are to be found in an average sample of crude London sewage. It is fortunate that milk is not a transparent fluid, else we would seldom drink it. If milk were a clear fluid the enormous growth of bacteria to be found in it would often be visible to the naked eye. The presence of a similar number of microbes in broth, jelly, wine, or beer would cause us to reject these substances as being unsightly or as affording an indication of fermentative and putrefactive changes. Fortunately, mere numbers of bacteria need not frighten

us, for all microbes found in milk are not harmful. On the contrary, an intense bacterial culture of certain organisms in milk has been recommended by Professor Metchnikoff as a means of prolonging life. One would like to see a company started in Bombay to supply pure sterilised milk. The company would have to establish a farm on the outskirts of the city, conveniently situated on the railway, where water and grass could be easily obtained. The cows on the farm would be specially selected and suitably housed, and the milking operations efficiently supervised. The farm would have attached to it a well-built milk house, where the milk would be at once distributed into bottles of suitable sizes to contain such quantities of milk as are generally required for domestic purposes, and these bottles would be sterilised and despatched to the city for distribution. It would be thus possible to obtain a supply of pure sterilised milk which would, if necessary, keep indefinitely, but which in ordinary course would be used and supplied fresh daily. It would also be a great boon for Europeans proceeding on long railway journeys from Bombay up country, more especially for those bringing young children with them. The army authorities recognised this some years ago and arranged for sterilised milk to be made available for soldiers' families.

May 4th.

Obituary.

WILLIAM FERRIS, M.D., B.S. LOND., M.R.C.S. ENG., L.R.C.P. LOND., D.P.H.

WE have to record the sudden death, at the early age of 34 years, of Dr. William Ferris, who was holding the post of second assistant medical officer to the Middlesex Asylum, Wandsworth. He started his medical career at St. Mary's Hospital in 1893. After obtaining the qualifications of M.R.C.S. Eng., L.R.C.P. Lond., in 1899, and taking his M.B., B.S. Lond. in the same year, he was appointed assistant medical officer at the Greenwich Infirmary, and whilst there took his Diploma in Public Health. In 1902 he was appointed an assistant medical officer to the Middlesex Asylum, Wandsworth. In 1904 he obtained the M.D. Lond., being the first candidate to take his degree in psychological medicine. He died on Saturday, May 15th, from an attack of double pneumonia, after only five days' illness. He was a great favourite with all he came in contact with, and was especially beloved by patients and colleagues. His keenness for detail and his methodical ways made many a difficult task appear simple, and he kept himself thoroughly in touch with the modern treatment of the insane. He was good at all sorts of games, especially at football, which he continued to play up to as late as last season.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Cavaillon, professor *agrégé* in the Lyons University.—Dr. Heinrich von Ranke, at Munich, where he was living in retirement. In early professional life he acted as assistant to Professor Johannes Müller in Berlin and to Professor H. von Mohl in Tübingen. In 1854 he was appointed to a position on the staff of the German Hospital in London, and thence went to the Crimea in the capacity of civil surgeon. After the war he returned to Bavaria, the land of his birth, and became extraordinary professor of children's diseases in the University of Munich, where in 1893 he received a patent of nobility with the right to use the prefix "von." His published works are fairly numerous and deal with a variety of subjects, including medical chemistry, pharmacology, anthropology, and prehistoric research. His age was 79 years. He should not be confounded with Dr. Johannes Ranke, professor of anthropology in Munich, who is his younger brother.—Dr. Otto Kappeler, chief surgeon of the State Hospital in Constance, aged 69 years.—Dr. William Engelmann, professor of physiology in the University of Berlin since 1897, and formerly at Utrecht. Dr. Engelmann was 65 years of age. His chief work was directed to the study of the neuro-muscular system and the heart.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

TUESDAY, MAY 25TH.

THE half-yearly session of the General Council of Medical Education and Registration commenced to-day at the Council's offices, 299, Oxford-street, W. Sir DONALD MACALISTER, the President, was in the chair.

New Members.

The following new members of the Council were introduced and took their seats: Dr. FREDERICK TAYLOR (as representative of the University of London for one year from Feb. 24th, 1909) and Dr. DAVID NEILSON KNOX (as representative of the Faculty of Physicians and Surgeons of Glasgow from May 3rd, 1909, to April 6th, 1911). Dr. TAYLOR was introduced by Dr. NORMAN MOORE, and Dr. KNOX by Dr. NORMAN WALKER.

The President's Address.

The PRESIDENT then delivered his address. He said: Since the date of our jubilee session in November last the Council has lost the services of three members, each of whom in his own way made contributions of value to our common work. Dr. Lindsay Steven, cut off in his prime, was esteemed throughout the West of Scotland as an accomplished physician, an able teacher, and a philanthropist who freely gave of his best for the good of others. His character gave weight to the opinions he had formed on the subject of medical education; the evident thoughtfulness and sobriety of his advocacy caused them to be received with respect. As representing the Council I attended his funeral in Glasgow, and witnessed the striking tribute to his memory which was offered by the concourse of colleagues and friends who followed it as mourners. Regrettable failures of health have led to the retirement of Dr. Pye-Smith and of Professor Young, who have been influential in our counsels during the last ten years. Dr. Pye-Smith brought to our aid a penetrating and highly cultivated intelligence, a profound knowledge of medicine and its ancillary sciences, and a concise and incisive manner of address. These rendered his advice helpful and his criticism effective. He never took part in discussion without illuminating some aspect of the subject on hand and pointing the way to a right decision. In administration as well as in debate he bore his part to our advantage, for during six years, when our finances gave occasion for some anxiety, he acted as one of our treasurers and assisted in restoring our affairs to a more prosperous condition. Professor Young, first as representative of the federal Victoria University and afterwards of the Victoria University of Manchester, was one of the numerous body of anatomists who have done and are doing good service to the Council. His strong common-sense, his alert understanding, and his reticent temper were characteristic of the northern schools in which he was trained and on which he reflected honour by his scientific achievements. In the work of our committees, and of our judicial sessions, we shall often miss his quiet but efficient coöperation. To both of these colleagues, who are now called upon to cease from active exertion, the Council will wish increase of strength and comfort in the enjoyment of their well-earned rest. Though it is now 12 years since Mr. Wheelhouse withdrew from office as a representative, he continued to be connected with the English Branch Council, as one of its trustees. His death at a good old age, in happy and honoured retirement, recalls to those who were privileged to be associated with him his ten years' tenure as one of the first directly elected members of the Council. By his kindly nature, his great experience, and his practical wisdom, he commended the principles for which he stood to his colleagues of the older *régime*, with the result that the changes involved in the Medical Act of 1886 came into operation with little difficulty and no friction.

The University of London has sent us a distinguished member of its Senate in the place of Dr. Pye-Smith, and the Faculty of Glasgow its visitor in the place of Dr. Lindsay Steven. To Dr. Frederick Taylor and Dr. David Knox we offer the welcome which is due to their personal merits and

services, no less than to their professional eminence. We may count with confidence on receiving from both the benefit of their special knowledge and experience.

In accordance with my duty as President, it has fallen to me to make representations to the Government, through the Lord President of the Privy Council on various matters regarding which resolutions were passed in November. The Council requested that steps should be taken for the appointment of a Royal Commission to inquire into the evil effects produced by the unstricted practice of medicine and surgery by unqualified persons. The Lord President has decided to make preliminary inquiries on the subject through the Local Government Board. A circular has accordingly been issued to medical officers of health asking for information concerning the extent of the practice complained of and its effects on the general health within their several districts. When the replies are received, the Lord President will be in a position to determine what further steps are desirable in the interests of the public.

From the Colonial Office the Executive Committee has received a copy of an Act of the General Assembly of New Zealand, entitled the Quackery Prevention Act, 1908. This Act is directed against obnoxious forms of irregular practice and imposes heavy penalties for these offences. The Executive Committee have replied that they would welcome similar legislation applicable to other parts of the British Empire.

In the Tuberculosis (Ireland) Bill, as originally presented to Parliament, the duty of advising the Irish Local Government Board with reference to the application of the proposed law was assigned to the Irish Branch Council; but no provision was made for meeting the expenses the Branch Council must thereby incur. On discussing the question with the authorities, it appeared that no grant from public funds was likely to be made for the purpose. The situation was dealt with by transferring the duty in question to the Presidents of the Royal Colleges of Physicians and Surgeons in Ireland, and with this change the Bill has passed into law.

By the Bill for the Registration of Nurses, concerning which a communication was received from the Privy Council on Nov. 13th, it was proposed to establish a General Nursing Council for the United Kingdom, of which one member out of 16 was to be appointed by the General Medical Council. The Nursing Council was to frame rules *inter alia* "regulating, supervising, and restricting within due limits the practice of registered nurses." It was represented by you to be expedient that the Medical Council should stand in the same relation to the body concerned with nurses as it does to the Central Midwives Board. At the Privy Council Office note was taken of your views; and I have ground for believing that, should the Bill be proceeded with during the present session, it will be proposed to amend it in the sense you indicated, the Executive Committee being intrusted with the function which under the English Midwives Act is committed to the English Branch Council. Should this arrangement be sanctioned by law, the expense falling on the Council would be trifling, as the matters passing under the review of the Executive Committee could be dealt with at its ordinary meetings. I was unable to obtain any assurance that a subsidy from public moneys would be granted to the Council in respect of this public service. As, however, other proposals dealing with the registration of nurses are under consideration, and as opinion appears still to be divided on the general question, it is probable that legislation on the subject will be deferred.

By your direction I communicated the Council's resolution of Nov. 28th respecting the General Anæsthetics Bill, 1908, to the Government departments concerned. The resolution supported the proposal to restrict to qualified medical practitioners the administration of drugs with the object of producing unconsciousness during medical, surgical, or obstetrical operations. In the present session of Parliament another Bill having a similar purpose has been introduced. Both Bills propose that dentists registered after a certain date shall not be entitled to administer general anæsthetics unless they possess a medical qualification. On this particular proposal the Council do not pronounce an explicit opinion, though its resolution on the general principle involved might be held to indicate its views with sufficient clearness. Now, however, we are asked in various quarters to express an opinion on the point, and in particular to give an answer to a question bearing upon it, which is submitted on behalf of the Lord President. The Council will therefore be called on to consider whether, apart from the saving to existing dentists of their customary practice, it is expedient in the public interest to confer in future on dentists who have no medical qualification, express legal authority to administer general anæsthetics to persons requiring dental operations. When it is kept in mind, first, that unless skilled attention is given to the state of the patient's bodily health no general anæsthetic is invariably "safe," and, secondly, that in dental practice the anæsthetist is often the operator also, it will be seen that the proposal contained in the Bills referred to is not without some justification in the interest of the public protection. The Registrar has received replies from the licensing bodies to his inquiry as to the degree in which effect has been given to the Council's recommendation—that candidates for medical qualifications should be required to produce evidence of having received practical instruction in the administration of anæsthetics. Nearly all the licensing bodies have answered that this requirement is already or will in future be enforced. The Council is thus justified in its contention, that fresh legislation to this end, which to be effective must be penal in character, is neither expedient nor necessary at the present time.

With the assistance of the legal advisers I have drawn up a memorandum on the penal procedure of the Council, showing the nature of the actions which have been held by it to constitute infamous conduct in a professional respect. This memorandum has been forwarded, at his lordship's own request, to the Secretary of State for the Colonies, and communicated by him to the Boards of Inquiry constituted by the medical enactments of the several Crown Colonies. It is to be hoped that the information conveyed will be useful in promoting uniformity of judicial action in professional matters within the Colonies concerned. The penal cases to be considered during this session are not numerous, though some of them are grave. They include one in which it will be necessary to inquire into a charge of "covering" an unqualified assistant. That such charges have now become rare testifies to the efficiency of the action taken by the Council some years ago, and to the praiseworthy ambition of the profession to dissociate itself entirely from a practice which experience had shown to be liable to grave abuse. A few charges against dentists have come before the Dental Committee, who will report to the Council on the facts of each case. The energies of the British Dental Association are actively engaged both in challenging what it deems to be reprehensible conduct on the part of registered practitioners of dentistry, and in applying with marked success a recent interpretation of the Dentists Act to the suppression of unwarranted pretensions to professional skill put forward by unqualified persons. A judgment delivered in the Court of Appeal last week appears to limit the application of that interpretation. I have asked our legal advisers to state for the information of the Council the precise nature of the limitation. I am informed that, at the instance of the association, an injunction for the restraint of dental practice by a company of unqualified persons has been granted by the High Court in England. This decision confirms the similar judgments of the High Courts in Ireland. But it is further held to impose on companies of unregistered practitioners the same disabilities as are now imposed on individual persons. Should this opinion be well-founded, the Act will prove even more effective than it has hitherto appeared to be for the prevention of irregular practice under cover of the Companies Acts.

The active exercise of its judicial functions is obligatory on the Council, and the effects are, without doubt, salutary from the professional as well as from the public point of view. But these functions involve a heavy drain upon the Council's funds, and it is not easy to see how, under the present law, the drain can be obviated or moderated. Two recent cases, which were unusually prolonged, cost us in legal and other necessary expenses nearly £2000. The result is that the financial year closed with an aggregate deficit of over £650 in the accounts of three branch councils. Though the cases under the Dentists Act were also both numerous and important, the simpler methods of investigation which the Act permits made the proceedings much less costly, with the result that the Dental Fund closed with a sufficient surplus to meet unforeseen emergencies. It is fortunate that for each of the three preceding years the receipts of the branch councils exceeded their expenditure. Except

perhaps in the case of the Irish branch, the accumulated surpluses will enable them to meet the exceptional deficits of the present year. It is to be hoped that the business to be dealt with during the session that begins to-day will entail no great expenditure of time or money. One practical consideration will indeed make it expedient that we should complete our sittings within this week. Monday, May 31st, is a Bank Holiday, and the printing establishment on which we depend for our daily programme and other necessary papers will be closed. Dr. Langley Brown has given notice of a motion that the proper steps be taken for adding to the Council a thirty-fifth member, to be elected by the practitioners of England and Wales. It will be for the Council, and afterwards for the Privy Council and for Parliament, to consider whether it is in fact expedient that the addition should now be made. In the near future we shall have an additional member from Ireland, as provided by the recent Universities Act; and we may also expect two additional members from the Universities of Wales and of Bristol. In coming to a decision on this question it will be desirable to have regard, on the one hand, to the inelasticity of our finances and of our Council chamber, and on the other hand to the unity and efficiency of the Council as at present constituted. By the terms of the Medical Act, the question to be decided resolves itself simply into a question of "expediency." In other words, it is a question to be answered in the light of such practical considerations as I have ventured to recall to your attention, without seeking to prejudice your decision.

The Education Committee have had a further opportunity of reviewing the admirable digest of facts relating to the medical curriculum which was included in their report of last November. They will probably be prepared to offer to the Council certain definite conclusions, on which action may be taken if action is required.

The Board of the Apothecaries' Hall of Dublin have informed the Registrar that they have determined to postpone until July 1st the resumption of their "Preliminary Examination in Education," concerning which the Council, on the recommendation of the Education Committee, expressed a strongly adverse opinion at its last meeting. The Executive Committee will report on the reply to this intimation which they deemed it their duty to forward to the Board. At a time when two newly constituted teaching Universities, each with its own preliminary examinations, are in process of organisation in Ireland, it is difficult to perceive that any advantage to medical culture can arise from the proposed incursion of the Apothecaries' Hall into the sphere of general secondary education and examination. The period for which the Council, on the application of the Apothecaries' Hall, appointed Sir Lambert Ormsby to act as an assistant examiner under the provisions of the Medical Act, 1886, will shortly expire. An application for a fresh appointment will be submitted to you on behalf of the Board. The Council will, I feel sure, recognise that Sir Lambert has discharged with efficiency the duties imposed upon him by the Act. The Executive Committee, in pursuance of the Council's instructions, have, with the assistance of our legal advisers, drafted a Standing Order applicable to cases of medical and dental practitioners who voluntarily apply for the removal of their names from the Medical or the Dentists Register. Should the Standing Order be approved, it will provide for a *casus omissus* in the procedure of the Council and remove a difficulty that has occasionally arisen. A vacancy having occurred in February by the retirement of Dr. Pye-Smith, the committee unanimously coöpted Dr. Norman Moore, the chairman of the Business Committee, to be one of its members until the annual election during the current session. On Saturday last we received from the Lord President a copy of the Draft Charter prayed for by the British Medical Association, with a request for any observations the Council may have to make thereon. The Draft Charter proposes that certain powers, which are of a comprehensive character, shall be conferred on the Association. Some of the powers appear at first sight to trench on the statutory functions of the Council, and these will require your careful consideration. It will probably be convenient that, in the first instance, the Executive Committee, in consultation with the legal advisers, should examine the Draft Charter and report to you on the provisions that specially concern the Council.

Dr. LITTLE moved a vote of thanks to the President for his address, and also moved that it should be printed in the minutes. He said that he had received a great shock when he heard of the death of Dr. Lindsay Steven. He was one of those men who made an impression upon those with whom he came in contact by the honesty of his character and his sincerity in everything that he did. He had accomplished his work as a member of the Council with no other object in view than the welfare of his profession. As to Dr. Pye-Smith, he was one of the greatest physicians and most accomplished scholars of his day. He hoped that he and Mr. Young would long be spared.

Dr. NORMAN MOORE seconded, and the motion was agreed to.

Yearly Tables.

Dr. MCVAIL moved that the Council should now receive yearly tables showing the result of professional medical examinations; of examinations for qualifications in sanitary science, public health; of professional dental examinations; of preliminary examinations; of answers sent by the medical authorities as to the exemptions granted by them in any part of the examinations during 1908; and also the results of the competition held in January, 1909, for commissions in the Indian Medical Service.

Dr. SAUNDBY said that he saw that in the examination for surgery, under the Examining Board in England by the Royal Colleges of Physicians of London and Surgeons of England, 372 candidates passed and 329 were rejected. He wondered if that were a misprint.

Mr. HENRY MORRIS said that he was sorry to say that the number of rejections was sometimes quite half of the candidates. He did not think that reflected on examiners, but he should say from his recollection that the figures quoted by Dr. Saundby was a fair average.

The PRESIDENT: There is no reason to suspect a misprint.

Mr. MORRIS: I don't think so.

The tables were then received and entered upon the minutes.

Additional Representation for Registered Practitioners.

Dr. LANGLEY BROWNE moved:—

That representations be made to the Privy Council that it is expedient to confer on the registered practitioners resident in England and Wales the power of returning an additional member to the General Medical Council.

He said that this was not the first time the matter had been taken before the Council, but he hoped this time it would be able to come to a satisfactory conclusion. The number of practitioners on the Register in England was 25,168, in Scotand 3845, and in Ireland 2658. In England the practitioners returned three members to the Council and Scotland and Ireland returned one each. He thought that these figures made out a very good case to give the practitioners of England and Wales another representative on the Council. Representation had been given to the new Universities, but for a long time no direct additional representation had been given to the great body of the profession in the country. He went on to argue that this additional representation was required because it was desired to bring the profession into closer touch with the Council. He thought that England should be divided into divisions and that Wales should have a representive of its own. However, he thought that would require a new Medical Act, and in the meantime he only asked that the Privy Council should adopt an extra member for England and Wales.

Dr. MCMANUS seconded the motion. He said that the general practitioners of England were in no way hostile to the Council as at present constituted, and they thoroughly realised the work which it had done since it was constituted in 1858. They realised that the members of the Council still maintained the honour and dignity of the profession. However, he went on to point out that young men who came on the Register got out of touch with the Council. That was a deplorable state of affairs. If additional representation were given to the rank and file of the profession he did not think that they would get better men on the Council, but it would bring the Council more into touch with the rank and file of the profession, who had a strong feeling that the Council did not sympathise with them and did not protect them from quacks of every description.

Dr. LATIMER supported the motion, and pointed out that the country as a whole was an unwieldy constituency in which to elect members of the Council. He thought that the country should be divided up into divisions and that Wales was entitled to a representative of her own.

Mr. MORRIS said that he strongly felt with Dr. Langley Browne that there was a certain amount of injustice that the vote of the medical practitioners of the country should not have been increased when there had been so constantly increases in the number of members of the Council from the new Universities, some of whom possessed an exceedingly small constituency. However, he found that there was a considerable indifference shown by many medical men in England and Wales in voting for representatives on the Council. They numbered about 25,000, but only 47 per cent. of them took advantage of the vote at the last election.

On a vote the motion was carried. 17 members voted for it, 5 against it, 8 did not vote, and 3 were absent.

On the motion of Mr. TOMES, a rider was added to the motion to the effect that the addition in question should not be made until the next election of representatives.

Voluntary Withdrawal of Names from the Register.

It was agreed to receive from the Executive Committee a report on the subject of voluntary withdrawal of names from the Medical Register and the Dentists Register. The report contained a proposed new standing order, as follows:—

Every application by a registered medical practitioner or dentist for the removal of his name at his own request from the Medical or Dentists Register shall be accompanied by a statutory declaration, to be made by the applicant, that he is not aware of any proceedings or of any reason for the institution of any proceedings which might result in establishing cause for the erasure of his name from the Medical or Dentists Register without his consent, or for depriving him without his consent of any qualification or licence entitling him to be registered.

The Executive Committee recommended the Council to adopt the proposed standing order.

The PRESIDENT moved the adoption of the proposed standing order. Sir JOHN MOORE seconded, and the motion was agreed to.

The Council adjourned.

WEDNESDAY, MAY 26TH.

Penal Cases.

The Council resumed its sittings at its offices, 299, Oxford-street, W. Sir DONALD MACALISTER, the President, was in the chair.

The whole day was occupied in the consideration of penal cases. The names of two practitioners were erased from the Medical Register.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—J. H. Clarke (Section I.), St. Mary's Hospital.
Medicine.—R. J. Cyriax (Sections I. and II.), St. Mary's Hospital; A. H. C. Dawes (Section I.), Westminster Hospital; J. A. Laughton (Section I.), Charing Cross Hospital; and W. E. North-Smith (Section I.), Durham and St. Mary's Hospital.
Forensic Medicine.—J. A. Koch, Amsterdam; and J. W. Williams, Cardiff and Guy's Hospital.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidates having passed the Final examination have been admitted Fellows of the College:—

A. Chalmers, J. H. Dauber, S. English, and T. H. Hay.

The following candidates have passed the Primary part of the examination:—

R. H. Barter, F. C. Crossle, J. L. Lunham, P. M'Cartan, and S. A. M'Swiney.

THE APOTHECARIES' HALL OF IRELAND.—At examinations recently held the following candidates passed in the subjects indicated:—

FIRST PROFESSIONAL.

Biology.—Simon Carroll, Joseph A. Moloney, George M. Mayberry, and Michael O'Donnell.
Physics.—Michael O'Donnell.
Chemistry.—Bernard J. M. Neary.
Completed Examination.—George M. Mayberry, Bernard J. M. Neary, and Michael O'Donnell.

SECOND PROFESSIONAL.

Anatomy.—George M. Mayberry.

THIRD PROFESSIONAL.

Pharmacy.—Edward Murphy, Jeremiah J. O'Mullane, and George Andeen.
Pathology.—Jeremiah J. O'Mullane.
Medical Jurisprudence and Hygiene.—Jeremiah J. O'Mullane.
Completed Examination.—Edward Murphy, Jeremiah J. O'Mullane, and George Andeen.

FINAL PROFESSIONAL.

Medicine.—George Andeen and Jeremiah J. O'Mullane.
Surgery.—Jeremiah J. O'Mullane, George H. Fisher, James H. Nichol, and James Stuart.
Ophthalmology.—Jeremiah J. O'Mullane, James H. Nichol, and James Stuart.
Midwifery and Gynæcology.—George Andeen, S. E. David, Edward Murphy, and Jeremiah J. O'Mullane.
Completed Examination.—George H. Fisher, Jeremiah J. O'Mullane, James H. Nichol, and S. E. David.

ST. BARTHOLOMEW'S HOSPITAL: POST-GRADUATE CLASSES.—A course of instruction for qualified practitioners will be given at St. Bartholomew's Hospital, beginning on Monday, July 12th, and ending on Saturday, July 31st. This post-graduate vacation course will include not only attendance on any part of the practice of the hospital but also on the special classes for clinical and laboratory instruction, details of which follow. In medical practice special classes will be held in the wards from 1.45 to 3.15 P.M. on Mondays and Thursdays, July 12th to 29th, by Dr. Norman Moore, Dr. Samuel West, and Dr. J. A. Ormerod, who will hold two classes respectively. In surgery classes will be held at the same hours in the wards or the clinical theatre on Wednesdays and Fridays, July 14th to 30th, by Mr. A. A. Bowlby, Mr. D'Arcy Power, Mr. C. B. Lockwood, and Mr. W. Bruce Clarke. In diseases of women Dr. F. H. Champneys will give three clinical lectures at 9.30 A.M. in the medical theatre on Thursdays, July 15th, 22nd, and 29th, while special clinical classes will be held in the gynæcological out-patient department on Tuesdays, July 13th, 20th, and 27th, by Dr. W. S. A. Griffith and Dr. H. Williamson. In bacteriology Dr. F. W. Andrewes and the demonstrators of pathology will give a course of practical bacteriology on Wednesdays and Fridays in the bacteriological laboratory, from 10 A.M. till 12 noon, beginning on Wednesday, July 14th. Other demonstrations on special methods of diagnosis, treatment, and diseases will be given, of which particulars will be found in the pamphlet on the course, which may be obtained on application to Dr. T. W. Shore, Dean of the Medical School. Practitioners wishing to attend are advised to make early application, as the accommodation is necessarily limited. The scale of fees is as follows: By payment of a composition fee of £8 8*s.* a practitioner will be entitled to attend for three weeks—1. Any of the special classes except bacteriology. 2. The ordinary hospital practice, including wards, out-patients, special departments, operations, and post-mortems. Practitioners who are perpetual students of St. Bartholomew's will be admitted to the post-graduate classes, except bacteriology, on payment of a fee of £6 6*s.* An extra fee of £2 2*s.* will be payable by practitioners who attend the course of bacteriology. Fees are due in advance, and cheques should be made payable to the Dean. Every practitioner who enters for a course is required to call on the Dean to sign the hospital register, undertaking to conform to the rules and regulations of the hospital and medical school.

BRIGHTON WORKHOUSE: RESIDENT ASSISTANT MEDICAL OFFICER.—The Brighton board of guardians has been considerably exercised for some time over the question of the appointment of a resident assistant medical officer at the workhouse. The matter arose from a visit paid by Mr. Andrew Fuller of the Local Government Board to the workhouse infirmary as far back as Nov. 2nd last. On Dec. 30th the Local Government Board wrote to the guardians thus: "The Board will be glad if the guardians will consider the question of appointing a resident assistant medical officer. The Board are advised that such an appointment would relieve the medical officer of a large share of the routine work at present devolving upon him, and so enable him to devote his personal attention more specially to questions of medical supervision and consultative work, and would also allow of more detailed attention than is now practicable to scientific work and accurate note-taking, the careful dieting of children, and the physical examination and observation of the sick inmates." A special committee of the guardians was appointed to consider the matter, and a report was drawn up to the effect that the committee found it was the invariable custom in workhouses with so large a number of inmates as at Brighton to provide the medical officer with

assistance for the due performance of his duties, and while recognising the faithful discharge by Dr. D. M. Ross of his duty during the past 26 years was of opinion that, considering there are at the present time upwards of 1500 inmates in the workhouse, 650 of whom are under medical treatment, the time has arrived when a resident assistant medical officer should be appointed. The report of the committee further made recommendations as to the erection of a bungalow residence in the workhouse grounds for the new officer. Strong feelings were entertained and expressed against the report not only on the question of expense but also in view of the report of the Poor-law Commission. However, after many meetings the guardians on May 18th appointed Mr. A. H. Duckett, M.B., of Frome, as resident assistant medical officer at a salary of £120 per annum, and for the second and subsequent years £125 per annum, together with residential allowances which for the purposes of superannuation were fixed at £50 per annum.

THE RESEARCH DEFENCE SOCIETY.—An influentially signed letter has been addressed to the Home Secretary by this society urging upon Mr. Gladstone that the long delay in the issue of the report of the Royal Commission on Experiments on Animals is contrary to the public interest.

RÖNTGEN SOCIETY.—The annual general meeting of this society will be held at 20, Hanover-square, W., on Thursday, June 3rd, at 8.15 P.M. After the transaction of the annual business, including the election of officers and council, Mr. R. S. Wright will show and explain the new "Snook" Roentgen apparatus.

PRESENTATION TO MR. H. W. BURLEIGH.—At the annual meeting of the Hospital Officers' Association held at the Gaiety Hotel on May 20th Mr. H. W. Burleigh, secretary of the Hospital for Epilepsy and Paralysis, Maida Vale, W., was presented with a silver tea and coffee service by members of the association upon his resignation as editor of the *Hospital Gazette*, and in recognition of his services in that capacity for the past five years.

THE TRADE IN HORSEFLESH FOR HUMAN FOOD.—Before Mr. Baggallay recently at the Tower-bridge police court the Bermondsey borough council successfully prosecuted a butcher named Kreppel for having on his premises, for sale or for preparation as human food, two large pieces of horseflesh, which had been seized by the council's inspector and destroyed by order of the magistrate. The meat was stated to have been bought from a man named Green, and the defence was to the effect that the defendant had suspected the condition of the meat when it was in his shop, and had in consequence ordered it to be set aside in the passage, where it was found, in order that it might be returned to Green instead of being offered for sale. In cross-examination, the defendant admitted that the meat was to go towards liquidating a debt to him from Green, and that the price of it was to be 1*s.* 8*d.* per stone. The magistrate was, however, not satisfied that the meat came from Green at all, and, taking a serious view of the charge, sentenced Kreppel to three months' imprisonment in the second division and ordered him to pay £10 10*s.* as costs. Notice of appeal was thereupon given and the defendant was released on bail.

THE GLASGOW UNIVERSITY CLUB DINNER.—The Glasgow University Club in London held its annual meeting, followed by a banquet at the Trocadéro Restaurant, on May 25th, the Right Hon. Alexander Ure, the Lord Advocate, being in the chair, supported by Principal Sir Donald MacAlister and Sir Patrick Manson. The company included Dr. G. A. Heron, the Hon. John McCall, M.D., the Right Hon. Charles Scott Dickson, Dr. L. Mackenzie, Dr. R. Haldane Cook, Dr. J. Pollock Simpson, Mr. W. H. Battle, Dr. J. Buchanan, Dr. Dan McKenzie, Dr. C. O. Hawthorne, Dr. A. B. Seton Orr, Dr. W. Craig Henderson, and Dr. D. S. Roxburgh. In front of the chairman lay a handsome silver snuff-box, the gift of Dr. Hawthorne, the late honorary secretary to the club. In accordance with the terms of the gift, the box was used "in the old Scottish style and fashion" during the evening, which was enlivened by vocal music. The chairman, after giving the loyal toasts, proposed "The University and the Club" in a speech of eloquent reminiscence, which evoked from the company the singing of the "Gaudeamus Igitur." The only remaining toasts were "The Guests" and "The Chairman." Sir Donald MacAlister proposed the first of these in place of Sir Henry Craik, who, he announced, was engaged at the House of Commons in attempting to gain a rebate on the petrol tax for medical men. The speaker coupled with the toast the name of Sir Patrick Manson, whose imperial services to public health he praised warmly. After a witty reply from Sir Patrick Manson, the Right Hon. C. Scott Dixon gave the health of "The Chairman." The club's annual report shows that for the ensuing year Lord Lister has been re-elected President, Dr. W. W. Don honorary treasurer, and Dr. W. Craig Henderson and Dr. D. S. Roxburgh honorary secretaries. The annual balance-sheet shows the club to be in a satisfactory financial condition.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Prevention of Tuberculosis.

Mr. HUDSON has presented to the House of Commons a petition from the National Union of Public Health Authorities in which it is stated that a large number of the representatives of city and town councils, as well as the Durham county council, pray that legislation may be introduced for the purpose of preventing tuberculosis, both human and bovine.

Milk-blended Butter.

The Board of Agriculture up to the present has approved of 34 different names for mixtures of butter and milk or cream under the recent Act of Parliament.

The Medical Profession in India.

A command paper dealing with the measures for promoting the growth of an independent medical profession in India has been laid on the table of the House of Commons.

Dairy Legislation for Scotland.

Lord PENTLAND, the Secretary for Scotland, has introduced into the House of Lords a Bill to provide for the purity of the milk-supply in Scotland and to regulate dairies. It has been read a first time. Concurrently with this measure another has been introduced into the House of Commons by a private Member, Mr. WATT, to provide for the better regulation of the sale of milk in Scotland. He has entitled it the Milk Control (Scotland) Bill.

Introduction of Milk Bill.

Mr. BURNS on Tuesday redeemed his pledge to introduce milk legislation. He formally presented his Bill "to make better provision with respect to the sale of milk and the regulation of dairies." It was read a first time without a word of explanation.

The text of Mr. BURNS's measure was published on Wednesday. Its provisions are indicated in a Memorandum. The main objects of this Bill, it states, are to provide for (1) the more effective registration of dairies and dairymen; (2) the inspection of dairies and the examination of cows therein; (3) the prohibition of the supply of milk from a dairy where such a supply has caused or would be likely to cause infectious diseases, including tuberculosis; (4) the prevention of the sale of tuberculous milk; (5) the regulation of the importation of milk so as to prevent danger to public health arising therefrom; (6) the issue of regulations for securing the supply of pure and wholesome milk; (7) the establishment by local authorities in populous places of milk depôts for the sale of milk specially prepared for infants.

It is further stated in the Memorandum that the provisions as to registration supersede the provisions as to the registration of dairies contained in the Contagious Diseases (Animals) Acts and the Orders made thereunder. The provisions as to the inspection of dairies and the prohibition of the supply of milk reproduce with amendment Section 4 of the Infectious Diseases Prevention Act, 1890, Section 71 of the Public Health (London) Act, 1891, and the model milk clauses incorporated in many local Acts. The clause as to the prevention of the sale of tuberculous milk is also taken from the model milk clauses, but the scope of the enactment is somewhat extended. The Board of Agriculture and Fisheries will in connexion with this Bill issue an Order under the Diseases of Animals Act, 1894, dealing with the notification of tuberculosis in cattle and the inspection, examination, detention, isolation, and slaughter of tuberculous cattle, and the giving of compensation in appropriate cases.

HOUSE OF COMMONS.

WEDNESDAY, MAY 19TH.

Irish Medical Men and the Petrol Tax.

Mr. W. MOORE asked the Chancellor of the Exchequer whether he could not give a rebate to medical men in Ireland in respect of the petrol which they used in their motor-cars, in the same respect as a rebate was to be given for the petrol consumed by commercial vehicles.—Mr. LLOYD GEORGE answered: Medical men are getting a rebate for their cars under my proposals.

Mr. MOORE: They are getting the rebate only on their cars, not on their petrol.

Mr. VINCENT KENNEDY asked the right honourable gentleman favourably to consider the entire remission of the petrol and motor-car taxes in the case of Irish dispensary doctors who used their private motors for the more speedy and efficient discharge of their professional duties of relieving the suffering poor under their care.—Mr. LLOYD GEORGE replied: As at present advised, I do not think there are sufficient grounds for granting medical men further concessions in addition to the rebate, which I have already proposed, of half the licence-duty on their motor-cars.

Major ANSTRUTHER-GRAY: Is the right honourable gentleman aware that the petrol used on the average by medical men will amount to something like £12 a year?

No reply was given.

Dairies in Scotland.

Mr. URE (the Lord Advocate) informed Mr. GULLAND that the Secretary for Scotland intended to introduce a Bill dealing with dairies in Scotland before the Whitsuntide recess.

The Infectious Diseases Hospital, Stornoway.

Mr. WEIR asked the Lord Advocate whether the Secretary for Scotland was aware that in the report of the medical officer of health of Ross and Cromarty just issued attention was again called to the fact that the infectious diseases hospital at Stornoway was in urgent need of a water-supply; and, in view of the danger to which patients were thus exposed, would the Local Government Board take such steps as might be necessary to ensure an adequate water-supply being provided without further delay.—Mr. URE replied: I am aware of the statement referred to, but I can only refer my honourable friend to a previous answer to the effect that in the present financial condition of the Lews District Committee there is no immediate prospect of making this improvement.

Mr. WEIR: Am I to understand that the Secretary for Scotland and the Local Government Board for Scotland are so utterly indifferent to the public health of the island that they intend to discard the Public Health Act?—Mr. URE: The Secretary for Scotland is not discarding the Public Health Act. The Local Government Board has no power.

Butter Substitutes.

Mr. FLYNN asked the honourable Member for South Somerset, as representing the President of the Board of Agriculture, whether he was aware that, notwithstanding recent legislation, fraud and adulteration in connexion with the sale of butter substitutes still prevailed in some parts of England and Wales; what steps, if any, the Board had taken to carry out the provisions of the Butter and Margarine Act, 1907; had the Board taken any action under Sections 2 and 3 of the Act; and had he any information as to how many local authorities had used their powers of entry and inspection under Section 2, Subsection (3).—Sir EDWARD STRACHEY answered: Probably there still is some fraud. The Board has taken all the necessary steps to carry out the Act, but they are too many to enumerate now. Full intelligence will be found in the intelligence report shortly to be issued. The Board has acted under Sections 2 and 3. Forty-seven local authorities have appointed officers under Subsection 3 of Section 2.

The Seizure of Foreign Meat at Grimsby.

Mr. STARKEY asked the President of the Local Government Board whether he would state the result of his inquiry into the seizure of foreign imported meat at Grimsby; whether any of the crates guaranteed by a foreign Government to contain meat sound and fit for human consumption were found to contain meat either tuberculous or in a state of fermentation; and, if so, what steps he proposed to take in the matter.—Mr. BURNS replied: I find that the meat recently seized at Grimsby included two diseased carcasses of calves, which, though they did not themselves bear the official label guaranteeing that they had been inspected by the officers of the Netherlands Government, were packed amongst several healthy carcasses, which were so labelled in a crate which itself bore an official label. I am in communication with the Consul-General of the Netherlands with respect to the matter.

Medical Reports on Elementary School Children.

Mr. SUMMERBELL asked the President of the Board of Education whether he could state how many medical officers for elementary schools had made reports to his department; and whether it was the intention of the Government to issue a report in regard to the same, giving the number of children examined and particulars as to their general health, and also reforms, if any, recommended by such medical officers.—Mr. RUNCIMAN furnished the following written reply: About 130 reports have been received up to the present date. The Board contemplates the issue of a report in due course on the work of medical inspection, but I am not in a position to indicate precisely what the contents of the report will be.

THURSDAY, MAY 20TH.

Medical Examination of Yeomanry Recruits.

Mr. MEYSEY-THOMPSON asked the Secretary of State for War what remuneration was paid to medical men, other than army surgeons, for cases in which recruits for the Yeomanry did not pass the medical examination.—Mr. HALDANE (by written reply) answered: A capitation grant per recruit is paid to county associations. The remuneration of the medical man who examines candidates for the Territorial Force is paid by the associations from their funds and is fixed at their discretion.

The Spirit Duty and Medical Preparations.

Mr. ROBERT HARCOURT asked the Secretary to the Treasury whether he had now ascertained and was in a position to inform the House why his expert advisers considered it impossible to give manufacturing chemists relief from the increased duty on spirit in some such manner as was provided by Part I. of the Revenue Act, 1906, as to spirits used in art, manufacture, &c., proof being given that the spirits were used as aforesaid.—Mr. HOBHOUSE replied: The use of duty-free pure spirit is allowed in laboratories of certain institutions for research or teaching purposes, but only under stringent regulations as to bond, &c. Part I. of the Revenue Act of 1906 has reference to the users of methylated spirit which is already highly denatured, and the conditions therein laid down would be inapplicable to the use of duty-free pure spirit.

Mr. WILKIE asked the honourable gentleman whether his attention had been called to the effect his proposed increase in the duty on spirits, &c., would have on tinctures and other pharmaceutical substances and alcohol used in the manufacture of chloroform, ether, chloral, &c., and the consequent effect on the resources of such institutions as the Dundee Royal Infirmary, which it was computed would be affected to the extent of £170 a year; and whether he would allow exemption to such institutions as were mainly maintained by voluntary subscriptions.—Mr. HOBHOUSE answered: I would refer the honourable Member to the answer I have just given to the honourable Member for Montrose Burghs (Mr. Robert Harcourt).

Medical Men and the Motor Car Tax.

During the debate on the Budget resolutions in Committee of Ways and Means,

Mr. LLOYD GEORGE (the Chancellor of the Exchequer) formally moved a resolution authorising the following scale of taxation on motor-cars:—

Horse-power.	Duty.	Horse-power.	Duty.
Under 6½	2 guineas.	26, but under 33 ...	8 guineas.
6½, but under 12 ...	3 ,,	33 ,, ,, 40 ...	10 ,,
12 ,, ,, 16 ...	4 ,,	40 ,, ,, 60 ...	20 ,,
16 ,, ,, 26 ...	6 ,,	60 and over	40 ,,

The right honourable gentleman proposes to tax the cars of medical men at half these rates.

Sir HENRY NORMAN (in the course of the subsequent discussion) said that he hoped that he had as much sympathy with the noble profession of medicine as any honourable Member, but he could not see more reason why a car of a medical man should be exempted from taxation than the car of any other professional man. The builder, the surveyor, the commercial traveller, and above all others the veterinary surgeon had certainly as much right to be relieved as the medical man of taxation, and the veterinary surgeon very much more so because he had always to go to his work, whereas a good deal of the practice of a medical man came to his own front door. It was true that the medical profession, to its very great honour, gave much precious service gratis or for next to no remuneration; but on the other hand the possession of even the smallest car would enable the medical man if he had the other qualifications practically to double his practice. Why he should be relieved of a few shillings of the cost, for it would only be a few, on an object which would enable him greatly to increase his income he (Sir H. Norman) could not see. A medical man of small means would certainly use a car of under 12 horse-power, which was a most serviceable vehicle and would do practically all that the owner of the car could desire. That medical man under these proposals would have to pay three guineas instead of two, and if a rebate was given to him of one-half the Chancellor of the Exchequer was making him a present of 10s. 6d. That could not be said to be any great boon to the poorest members of the medical profession and it was hardly worth the trouble of doing it. The medical man who used a valuable and powerful car, which probably the ladies of his family used for their own purposes, could well afford to pay the increased six guineas instead of two, which would only mean two visits of two guineas each. If the Chancellor of the Exchequer did not see his way to abandon what he (Sir H. Norman) ventured to describe as unjust and unreasonable relief he would strongly urge the right honourable gentleman to limit it to the cars of 12-horse power and under, because there could be no possible reason for giving any relief to a medical man who could afford to own and use a valuable car.

Mr. CATHCART WASON thought that honourable Members who knew the life of the poor country medical man and the difficulty which he had in getting about the country would appreciate the point he was about to make. As a rule, country medical men used very low horse-power cars. He thought that the Chancellor of the Exchequer would make no very great sacrifice if he exempted these cars altogether. They were usually propelled by 16-horse power motors. These cars were generally used by medical men who in Scotland led a very hard life, and anything which the Chancellor of the Exchequer could do to make life easier for them and for the poor people whom they attended would be gratefully received. He thought that the right honourable gentleman would be doing a great public service both to medical men and their patients in the north if he could make a concession in regard to these cars.

Colonel LOCKWOOD remarked that he hoped that the Chancellor of the Exchequer would stick to his guns with regard to the rebate to medical men. It was a very fair rebate.

Mr. LLOYD GEORGE said that the reason why the Government should have made a rebate in respect of the car of the medical man was a humanitarian one. It was very desirable that a difference should be made in the case of the medical man's car, not only from his own point of view, but from the point of view of a person who lived in a remote district, four, five, or even ten miles away from a medical man. The difference of an hour in his arrival at a patient's house might mean the difference between life and death, or the alleviation of pain and the continuance in misery to the patient. Therefore he thought that the medical man was entitled to some exemption, and, if necessary, it should be substantial. That was really why he had not been able to consider the other claims for abatement which had come before him in regard to other professions and occupations which did not come into the same category as that of the medical man.

Lord ROBERT CECIL said that without committing himself to every detail he desired to express his thanks to the Chancellor of the Exchequer for the differentiation in favour of the medical man. Many of his constituents felt very strongly on that point, and he trusted that as the Finance Bill proceeded the representations of honourable Members might be successful in softening the heart of the right honourable gentleman in the same direction in respect to petrol.

The resolution was agreed to.

MONDAY, MAY 24TH.

University Colleges and the Government Grant.

Sir WILLIAM COLLINS asked the Secretary to the Treasury whether he was aware that inconvenience was being experienced by the various university colleges which participated in the Government grant by reason of the delay in publishing the report of the Advisory Committee of the Treasury made last year, and the Treasury decisions thereon; and whether he could now state when the report and minute, which were promised very shortly in March last, were likely to be published.—Mr. HOBHOUSE answered: The questions raised in the report of the committee are still under consideration, but I hope that a conclusion will be

arrived at very shortly. The grants for the year have already been issued to the various colleges, and I do not think that they suffer any inconvenience through the report not having been published.

The Health of the Army in India.

Sir WILLIAM COLLINS asked the Under Secretary of State for India what were the number of cases and deaths, and the corresponding rates per 1000 of enteric fever, cholera, plague, and small-pox respectively, in the native army and among the European troops in India in each year from 1900 to 1908.—Mr. HOBHOUSE (on behalf of Mr. BUCHANAN) wrote in reply: The Government of India will be asked to furnish a return giving the information asked for.

TUESDAY, MAY 25TH.

Mr. H. C. Ross and the Egyptian Sanitary Service.

Mr. RAMSAY MACDONALD asked the Secretary of State for Foreign Affairs whether he was aware that Mr. H. C. Ross, late of the Egyptian Sanitary Service, left the navy to join that service on an understanding given him by Sir Horace Pinching, then Director-General of the Egyptian Public Health Department, that so soon as a vacancy occurred in the permanent staff it would be filled by Mr. Ross; that Mr. Ross received from Sir Horace Pinching information that his services were entirely satisfactory; and that, on the appointment of a new Director-General, Mr. Ross was informed that he would not be appointed to the permanent staff because in future such appointments were to be given to natives; whether he was aware that the next vacancy was filled by an officer of the Royal Army Medical Corps, and that Mr. Ross was then ordered to relinquish charge of work which he had planned and carried on for the extinction of malarial fever in Cairo; and whether, seeing that, as the result of the action of the Egyptian Government, the attempts inaugurated in Cairo and Heluan to extirpate mosquitoes and rid the country of malaria were stopped, he proposed to take any action in the matter.—Sir EDWARD GREY replied: My information is to the effect that Sir Horace Pinching did not promise Mr. H. C. Ross a permanent post in the Egyptian Sanitary Service, but that he offered him a temporary post with the prospect of a permanent appointment if his work proved satisfactory. Mr. Ross's work was considered satisfactory by Sir Horace Pinching, but not by that gentleman's successor, who, in the exercise of his discretion, did not feel justified in giving Mr. Ross a permanent appointment. Mr. Ross states that Mr. Graham informed him that in future such appointments were to be given to natives, but there is no corroboration of this in Mr. Graham's account of the interview. I am aware that the vacancy in question has been filled by an officer of the Royal Army Medical Corps, and that Mr. Ross was ordered to Upper Egypt on plague duty. I have no information to the effect that the attempts to extirpate mosquitoes at Cairo and Heluan have been abandoned, but in June last I received a report that the work at the latter place was being very efficiently supervised by a subordinate employee. The Director-General of Health at Cairo must be left full discretion to select for permanent posts in his department those persons whom he may consider most suitable, and His Majesty's Government has no ground for interference with his decisions.

The Sale of Buttermilk in Belfast.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the fact that despite the recommendations of the recent Belfast Health Commission buttermilk was still brought into Belfast in manure carts; and whether he would take immediate steps to prevent this danger to the public health.—Mr. BIRRELL (by written answer) replied: The Local Government Board understands that it has never been the practice to bring buttermilk into Belfast in manure carts. The empty vessels, however, have been taken into the country in these carts, and the local authority is endeavouring to put a stop to this most objectionable custom.

Medical Men and the Petrol Tax.

Mr. LLOYD GEORGE (replying late at night to several honourable Members who had urged the claims of medical men for a rebate of the petrol duty in respect to their motor-cars) said that he admitted that there was something to be said for the suggestion that a rebate should be made in favour of medical men. There were, however, practical difficulties which had to be considered, and he could not pledge himself at present to any definite concession. The matter was worthy of his attention, and he hoped that on the committee stage of the Finance Bill he would be able to make a more definite statement.

WEDNESDAY, MAY 26TH.

The Indian Medical Service.

Mr. KETTLE asked the Under-Secretary of State for India whether it was the policy of the Government of India to make use of the civil branch of the Indian Medical Service as a reserve of officers for the Indian Army; whether it was proposed in case of war to withdraw officers of the Indian Medical Service from the posts which they held at present in all the important civil medical institutions; and, if so, whether any provision was or would be made to fill their places.—Mr. HOBHOUSE replied (on behalf of Mr. BUCHANAN): The civil side of the Indian Medical Service is intended to be used to a considerable extent as a war reserve, but the officers holding the more important and specialised posts in civil medical institutions are not regarded as a part of the war reserve.

BOOKS, ETC., RECEIVED.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Medical Inspection of Schools. By A. H. Hogarth, M.B., B.Ch. Oxon., D.P.H. Price 6*s.* net.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, London.

The Year-book of the Scientific and Learned Societies of Great Britain and Ireland. Price 7*s.* 6*d.*

HAMMOND, HAMMOND AND CO., London,

Children of the Poor.' Descriptions of their Life: the Possible Means of Improving the Conditions under which they are Reared. By A. Davies Edwards, M.B., B.S. Lond., B.Sc., D.P.H., &c. Price 1*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALCORN, R. G., L.R.C.S. Irel., L.R.C.P. Edin., has been appointed Visiting Surgeon and Medical Officer of the Lock Hospital at Maitland Jail, New South Wales, Australia.

ANDREWS, A., M.R.C.S., L.S.A., has been appointed Visiting Surgeon and Medical Officer of the Lock Hospital at Albury Jail, New South Wales, Australia.

BARTLEY, J. S., M.B., Ch.B. Melb., has been appointed Visiting Surgeon and Medical Officer of the Lock Hospital at Broken Hill Jail, New South Wales, Australia.

BASSETT, W. F., M.D., M.Ch. Edin., has been appointed Visiting Surgeon and Medical Officer of the Lock Hospital at Bathurst Jail, New South Wales, Australia.

CARRUTHERS, C. U., L.R.C.S., M.R.C.P. Irel., L.K.Q.C.P. Irel., has been appointed Visiting Surgeon and Medical Officer of the Lock Hospital at Biloela Jail, New South Wales, Australia.

HENRY, T. J., F.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Visiting Surgeon and Medical Officer of the Lock Hospital at Grafton Jail, New South Wales, Australia.

JOHNSON, R. FITZHERBERT, M.B., Ch.B. Edin., has been appointed Junior House Surgeon at the North Staffordshire Infirmary and Eye Hospital.

LIDDELL, L. S. L., M.B., M.S. Edin., has been appointed Medical Officer and Public Vaccinator for the Bury Relief District of the Rugby Union.

POLLOCK, W. B. INGLIS, M.D. Glasg., has been appointed Assistant Surgeon to the Glasgow Eye Infirmary.

STIBBE, E. P., M.R.C.S., L.R.C.P. Lond., has been appointed a Government Medical Officer in the Fiji Islands.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon and Registrar. Also House Surgeon. Salary of former £100 per annum, and of latter £50 per annum, with board, residence, and washing.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BETHLEM HOSPITAL.—Two Resident House Physicians, unmarried, for six months. Salary at rate of £25 each per quarter, with apartments, board, and washing.

BIRKENHEAD UNION INFIRMARY AND SANATORIUM.—Resident Assistant Medical Officer. Also Female Resident Assistant Medical Officer. Salaries £120 and £100 per annum respectively, with board, washing, and apartments.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant Resident Medical Officer for holiday duty. Salary 25 guineas, with board and residence. Also Second House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and attendance.

BUXTON, WYE HOUSE ASYLUM.—Assistant Medical Officer. Salary £120 per annum, indoor, all found.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon also Assistant House Surgeon, both unmarried. Salaries £80 and £60 per annum respectively, with board, lodging, and washing.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board, apartments, and laundry.

DERBYSHIRE ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, &c.

DUMFRIES, CRICHTON ROYAL INSTITUTION.—Three Crichton Research Fellowships. Value £250 per annum each, with board, quarters, attendance, and laundry.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—House Physician for eight months. Salary at rate of £60 per annum, with board, residence, and washing.

FINSBURY BOROUGH COUNCIL.—Medical Officer of Health. Salary £600 per annum.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

HACKNEY UNION WORKHOUSE AND INFIRMARY.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with rations, apartments, washing, and attendance.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Resident Medical Officer. Salary at rate of £50 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £30, with board and residence.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Assistant House Surgeon (female). Salary £40 per annum, with board and laundry.

INDIAN MEDICAL SERVICE, India Office, London.—Twenty-one Commissions.

IPSWICH, EAST SUFFOLK HOSPITAL.—Senior House Surgeon. Salary £80 per annum.

KINCARDINE (ROSS-SHIRE) PARISH COUNCIL.—Resident Medical Officer and Vaccinator. Salary £105 per annum, with lunacy fees.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Senior Assistant Medical Officer. Salary £150 per annum, with board, lodging, and attendance.

LEEDS GENERAL INFIRMARY.—Resident Surgical Officer. Salary £150 per annum, with board, residence, and washing.

MANCHESTER ROYAL INFIRMARY.—House Physician for three months. Board and residence provided. Also Accident-room House Surgeon for three months. Board and residence provided.

MEDICAL MISSION HOSPITAL, Balaam-street, Plaistow, E.—Assistant Doctor (female) for six months. Board, residence, and laundry provided.

METROPOLITAN ASYLUMS BOARD FEVER HOSPITALS.—Assistant Medical Officer, unmarried. Salary £180 per annum, with board, lodging, and washing.

MIDDLESEX COUNTY ASYLUM, Upper Tooting, S.W.—Fourth Assistant Medical Officer.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Junior House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Junior Resident Medical Officer. Salary £50 per annum, with board and residence.

NORFOLK COUNTY ASYLUM, Thorpe, Norwich.—Second Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, attendance, and laundry.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Anæsthetist.

QUEENSLAND, AUSTRALIAN INSTITUTE OF TROPICAL MEDICINE, Townsville.—Director of the Institute.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, with board, lodging, washing, &c.

ST. GILES, CAMBERWELL, WORKHOUSE, Constance-road, East Dulwich.—Locum Tenens Medical Officer for four weeks. Salary 4 guineas per week, with board, lodging, and washing.

ST. MARY'S HOSPITAL, London, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments, rations, &c.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—House Physician. Salary £100 per annum, with apartments, board, and washing.

SUNDERLAND INFIRMARY.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

TEIGNMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

WALSALL AND DISTRICT HOSPITAL.—House Surgeon, also Junior House Surgeon. Salary of former £100 and of latter £80 per annum, with board, residence, &c.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry provided.

WESTERN AUSTRALIA, STATE OF, MEDICAL AND HEALTH DEPARTMENT.—Medical Officer to the Central Board of Health. Salary £400 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Two House Surgeons. Salary £80 per annum, with board, lodging, and laundry.

WORCESTER GENERAL INFIRMARY.—House Physician. Salary £100 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Cleator, in the county of Cumberland; at Truro, in the county of Cornwall; at Misterton, in the county of Nottingham; and for the Parish of Kilwinning, in the county of Ayr.

Births, Marriages, and Deaths.

BIRTHS.

HOWITT.—On May 19th, at "Lyme Regis," Hough-green, Chester, the wife of J. H. Howitt, M.A., LL.B., M.R.C.S., L.R.C.P., of a son.

MURISON.—On May 19th, at Burleigh Lodge, Erith, Kent, the wife of W. R. Murison, L.R.C.P. & S. Edin., of a daughter.

DEATHS.

DRINKWATER.—On May 19th, at St. John's, Bicester, Oxon., William Drinkwater, M.R.C.S. Eng., L.R.C.P. Edin., aged 68 years.

DUNCAN.—On May 24th, Robert William Duncan, M.B., C.M., aged 40 years.

LAWTON.—On May 23rd, at 16, Trinity-road, Bootle, the residence of his brother-in-law, Mr. R. R. Stitt, William Lawton, M.B., C.M. Edin., youngest son of the late Rev. M. A. Lawton, B.A., Vicar of Kilnwick-Percy, Yorkshire.

OWEN.—On May 19th, at Lymefield, Whalley Range, Manchester, Simeon Holgate Owen, M.D., M.R.C.P., in his sixty-fifth year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MULTIPLE INJURIES FROM A SINGLE BULLET.

To the Editor of THE LANCET.

SIR,—With reference to this subject may I crave the hospitality of your columns to record what is probably a unique case—where one bullet produced two entrance wounds, three exit wounds, with fracture of seven bones, and laceration of the right subclavian vessels.

On the morning of April 30th last, Fazal Ali Khan, a sepoy of a regiment stationed here, having obtained his rifle for the ostensible purpose of going on parade, went down to the bazaar, fired at, and killed, a woman with whom he had previously had a quarrel, and then returned to the lines and shot himself through the chest. I was called at 7.10, rode down to the lines, and finding the man still alive gave one fiftieth of a grain strychnine hypodermically. He was carried up to hospital, where I plugged the entrance and exit wounds in the chest, gave saline solution per rectum, and three pints of adrenalin-saline solution intravenously. There was not much external hæmorrhage, but the patient died at 10 A.M.

During the morning I went down to the bazaar. The body of the woman was lying outside the door of her house in a semi-prone position on the left breast. Beside it was a small brass lotah which she had been using while brushing her teeth. A considerable stream of blood had flowed down the step outside the house and clotted. Five feet to the left of the body was a small piece of "splashed" bullet, and 15 feet in front of the body was an empty government ·303 cartridge lying beside a tree, from behind which the man had fired, unseen.

The necropsy revealed the track of the bullet. The woman had been cleaning her teeth facing the tree, in the semi-squatting posture adopted by natives, with the right hand raised to the mouth. The bullet had struck the back of the right forearm, producing a small punched-in entrance wound (Wound 1) two and a half inches above the ulnar styloid. It had then struck the subcutaneous border of the ulna and had smashed this bone into four fragments, only held together by periosteum. The lowest line of fracture was three and a half inches above the radio-carpal joint, being complete inwards and downwards. The highest line of fracture was three inches below the olecranon. The radius was intact. In the front of the forearm (Wound 2) was a large gaping wound seven by three and a half inches, with ragged edges and full of torn and prolapsed muscle. The only tendon in the wound left intact was that of the palmaris longus. Several small fragments of the cupro-nickel coating of the bullet were scattered about this wound.

The main portion of the bullet had then entered the neck through Burns's space (Wound 3), just above the upper edge of the sternum and internal to the sterno-mastoid, by a small circular wound. A small piece of the bullet coating was present just below the surface of this wound. Below the right clavicle (Wound 4) was a large gaping wound with great loss of tissue, four by two and a half inches, extending to the anterior axillary fold. The clavicle was fractured completely, both ends of the fractured bone projecting into the wound. The subclavian vein was torn across below the inner fragment, and the subclavian artery was ruptured below the outer fragment. Both right pectorales muscles were full of clot and were much torn, while another fragment of bullet coating was lying in the substance of the major. The inner fragment of clavicle, about one and a half inches long, was split longitudinally almost to its sternal articulation. The anterior part of the first right rib was fractured completely across below the clavicle, and its outer portion split longitudinally for three-quarters of an inch. Several small bony splinters lay in the wound below the clavicle.

The left lung and pleura were healthy. The heart was healthy, but small, pale, and contracted. No great vessels below the right subclavian level were injured. The right pleural cavity contained about two pints of uncliotted blood. The right lung was traversed by a deep laceration from the front aspect of the upper lobe to the posterior aspect of the upper and lower lobes, the middle lobe being also torn. Fragments of bone lay in the lung substance and the exit wound at the back of the lung was a vertical rent nearly six inches long. The main piece of the bullet, after impinging against the right side of the vertebral column, had then left the thorax by a ragged gap in the pleura at the level of dorsal vertebræ six and seven. The lateral aspects of the centre of these two vertebræ were broken in and the sixth and seventh right ribs fractured across close to their origins. The final exit wound (Wound 5) was an inch in diameter and nearly circular, placed to the right of the sixth dorsal spine. Some torn muscle had prolapsed into the wound, and just under cover of it was the main portion of the bullet—a battered piece of lead—nearly circular, half an inch in diameter, and entirely devoid of its covering.

The case is of interest as exhibiting the explosive effects of a bullet striking against compact bone. The notes of the necropsy on the man may be added, as they illustrate a further point in gunshot injuries of the chest. In this case the entrance wound was a very small circular one, only just the size of the ·303 bullet, with blackened driven-in edges. It was in the right mid-clavicular line, just above the third rib. Very extensive surgical emphysema of the subcutaneous tissues was present. It extended over the right side of the chest, upper part of the right arm, both sides of the neck, right side of the anterior abdominal wall, posterior aspect of the whole thorax and both

flanks. The right scrotum was ballooned with air in its subcutaneous tissues. The right pectoralis major was torn and full of clot. Beneath it a gap an inch long extended from third to fourth ribs. The left lung was extensively bound down by adhesions, especially at the apex and anterior and posterior aspects of the base. Its tissue appeared healthy on section. The heart was healthy, pale, contracted, and empty. The right pleural cavity contained two and a half pints of fluid blood. The right lung was not adherent and appeared healthy on section. Except where very extensive subpleural hæmorrhage had occurred it was very pale and bloodless, especially at the base. The middle and upper lobes were lacerated and pulverised in the most extraordinary manner. The lung on being removed from the body almost fell into two pieces—an upper, smaller, and lower, larger, portion. The bullet had left the thorax by notching out a piece of the upper border of the sixth right rib behind. The rib was also slightly splintered inwards for half an inch. The surface exit wound was three inches from the vertebral spines—circular, and only slightly larger than the entrance wound. No portion of the bullet was found in the body or clothing. The entrance and exit wounds in this case were perfectly typical of small bore gunshot wounds. It is usually held that such bullets cause a narrow linear track through the lung, that the hæmothorax arises from the wounded intercostal vessels, and that death in such cases from pulmonary hæmorrhage is rare. In this instance, in view of the adhesions around the left lung, it is probable that even after injury respiration was largely carried on by the right lung, and that the extensive laceration of the lung substance was caused by blood pouring out of the wounded pulmonary branches under the overlying and resistant pleura. I am, Sir, yours faithfully,

R. KNOWLES,
Lieutenant, Indian Medical Service.

Deesa, Rajputana, India, May 5th, 1909.

"THE PHYSICIAN'S LAMENT."

WE quote from an amusing metrical lamentation in the columns of the *St. George's Hospital Gazette* by the editor's courtesy. We all know that times are bad in certain quarters, but hope devoutly they are not as bad as this prophet of evil paints them. He does not follow the despondent precedent of singers in exile—on the contrary, he can still pluck his harp to a spirited, if pessimistic, tune—but he states his intention of retiring. We trust his experiences in a new sphere of activity will yet inspire him to a song of triumph, for we should like to hear more from him.

Oh! Harley, Wimpole, Welbeck Street,
Oh, land of nursing homes,
Through whose depressing thoroughfares
The hungry doctor roams,
How gladly do I bid adieu
To all thy men of fame,
And so renounce for ever all
Attempts to make a name.

I've had a neatly lettered plate
For seven years or more
Conspicuously mounted on
A highly varnished door:
To play the true consulting game
I've done my level best,
But yet I've never made enough
A fiver to invest!

* * * *

I medically treat a host
Of relatives and friends,
Not one of whom on doctor's bills
A penny ever spends;
To buy them wedding presents when
They marry—and, alack—
Whene'er they die I have to clothe
My children six in black!

My rent's as high as rent can be;
My rates and taxes rise;
To wheedle money out of me
Each fellow-creature tries;
Big bills are ever coming in
My energies to damp:
In fact, from always writing cheques
I'm getting "writer's cramp"!

A closing stanza emphasises the often forgotten fact that a medical man must have food if he is to carry on his work, a point of view which the public sometimes forgets and which Governments are particularly slow to recognise.

PLANTS IN THE SICK-ROOM.

IN the *Massachusetts Medical Journal* for May Dr. C. V. Stone discusses the rôle played by plants in the sick-room. Formerly it was thought that the presence of plants, especially flowering ones, in a sick-room was injurious, since they were considered to absorb the oxygen of the air and exhale carbon dioxide. But, as every medical student knows, physiologists have shown that a much more important vital action of plants is their power to absorb carbon dioxide and exhale oxygen and possibly ozone. Dr. Stone considers that there is little room for doubt as to the beneficent influence that house plants are capable of exerting in the sick-chamber. Plants transpire aqueous vapour with such rapidity—it has been estimated at one-fourth of an ounce per square foot of leaf surface during the 12 diurnal hours—that it is possible to increase the humidity of the atmosphere of an apartment by simply regulating the amount of leaf surface exposed. Dr. Stone thinks it possible that the vapour emitted from plants is medicated to some extent in passing through the tissues, and so possesses greater sanitary value than ordinary atmospheric moisture. He gives several family histories which, as he considers, tend to show the value of house-plants in cases of affections of the lungs. In one family the father and two sons gave a marked family history of tuberculosis, but all enjoyed good health while they pursued the occupation of florist. The father, when 60 years of age, met with an accident which disabled him, and in a few months he went into consumption and died. The sons gave up their occupation at the age of 35 and went into the retail business, and about the same time they developed the disease and died within a year. It is, of course, quite probable that these facts will bear some other interpretation to that advanced by their recorder.

However, Dr. Stone gives directions for this method of treatment, if we may so call it. He advises the use of foliage plants with soft, thin leaves and an extensive leaf surface, care being taken to avoid highly scented plants which often cause headache. It is necessary to consider the extent of leaf surface and the size and exposure of the room, so as to achieve the best results. In advanced stages of tuberculosis Dr. Stone recommends a large number of plants to be kept in the room at a temperature of 68° to 74° F. This stipulation will be enough to condemn the "treatment" to the minds of most physicians. An average temperature of 70° is certainly too high for a sick room. In most climates it would render systematic open-air treatment impossible. There is more to be said for Dr. Stone's suggestion that the patient should assume the care of plants, which to most persons becomes a pleasing occupation, frequently leading to a wider study of the subject and so tending to relieve mental tension or depressing *ennui*. We may add that in hospitals in this country it is a very general custom to remove all plants from wards at night, and the same course should certainly be taken with growing or cut flowers in all sick rooms, for their scent is often oppressive, especially on a summer night.

AN INFLUENTIAL APPEAL.

IN response to the appeal in THE LANCET of May 15th the following subscriptions have already been received:—

	£	s.	d.
Sir Charles A. Cameron, C.B. (Dublin)	5	5	0
Dr. Ninian Falkiner (Dublin)	1	1	0
Mr. Charles Gibbs (London)	2	2	0
"Anonymous" (University of Leeds)	2	2	0
Dr. John Brown (Bacup)	0	10	6
Dr. C. E. Cormack (Vichy)	1	0	0
Postal Order, Devonshire-street, London, W. ...	1	1	0
"A Well-Wisher," Boscombe...	1	0	0
"Anon.," Exeter	1	0	0
Sir John Moore, (Dublin)	2	2	0
Dr. I. Burney Yeo (London)	2	2	0
Dr. Maguire	0	10	6
Sir Stewart Woodhouse (Dublin)	3	3	0

THE SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

THE playground of any large school is a pleasant sight when numbers of children are racing to and fro in their games and filling the air with sounds of mirth. It is perhaps at such times that children are seen at their best—when they feel that all is well with them and that there is no need for restraining their natural propensity to exercise their lungs and their limbs. Far otherwise is the case with thousands of little sufferers whose sad condition is every year reported to the Society for the Prevention of Cruelty to Children. At the annual meeting of this society, held on May 25th, it was stated that during the twelvemonth ended March 31st, 1909, there were 50,015 cases of cruelty to children reported over the area of operations in England, Ireland, and Wales. Compared with the previous year, this was an increase of 3598 cases, part of this increase being attributable to the appointment of more inspectors under the society's scheme of extension. The number of children involved in these cases was 144,234, an excess of 9982 over the number for the preceding year. Passing to some of the details given in the annual report, we find that there were 43,077 cases of what has come to be described as ordinary neglect, 838 of ill-treatment connected with immoral acts, 654 of exposure, 811 of causing to beg, 243 of abandonment, and 7 of manslaughter. Of the total number of 144,234 children reported on, 40,104 were insured, and the sum of money forming the aggregate insurance was £205,962. Prosecutions are not undertaken by the society unless all possible methods of warning the culpable individuals have failed. The reason for warnings being disregarded seems to be that offending parents have lost self-respect and the power of self-control, and when matters come to this pass the society is convinced that a conviction by a court of justice has a most salutary deterrent effect. Of 2399 prosecutions instituted by the society only 77 were dismissed. Prosecutions for neglect (including manslaughter, abandonment, and exposure) numbered 2038; of these only 19—i.e., less than 1 per cent.—were unsuccessful. For crimes of violence 178 cases were taken to court and nine of these were dismissed. In the class described as offences against morality there were 146 prosecutions with 46 dismissals—i.e., a proportion of 31·5 per cent. The relatively numerous acquittals in this group of the prosecutions were due to such offences being often committed in circumstances in which corroboration was difficult or impossible to obtain. As the society's charter makes it a duty to prevent not only

"the public and private wrongs of children," but also "the corruption of their morals," no effort must be spared to check what is one of the worst crimes against little girls. In another part of the report it is mentioned that the custody of 66 children removed from the care of their parents has been vested in the society and that the total number of children for whom the society is responsible is 414. Orders for whole or partial maintenance are obtained wherever possible, and under this head parents and guardians have contributed £1231. The society is to be congratulated on a further token of official confidence which it has recently received. In the event of children being kept in homes or institutions wholly or partly maintained by voluntary contributions, the Secretary of State is empowered by the Children Act to cause any such institution to be visited by persons appointed by him for that purpose. The choice of the Secretary of State has fallen on this society and his authority has been given for such visits to be paid.

"A CRUSADE AGAINST FLIES."

SOME correspondence has reached us in regard to our annotation last week under the above title. For the guidance of those who wish to try formaldehyde as an exterminant of flies, it should be stated that the strength of the solution should be not less than two teaspoonfuls of strong formaldehyde solution (or formalin, which contains 40 per cent.) in a pint of water. It is sufficient to expose this solution in shallow dishes or soup plates in the places frequented by the pests. In the article referred to mention was made of "a weak solution of weak formaldehyde." The word "weak" was used a second time in error.

VEGETARIAN FEDERAL UNION.

WE are asked to announce that the Vegetarian Federal Union will hold its annual Congress from June 16th to June 19th, when meetings and social functions will be held, to which all interested in "Food Reform" are invited. Particulars are to be obtained from Miss F. J. Nicholson, Memorial Hall, Farringdon-street, London, E.C.

AN AMMONIUM CHLORIDE INHALER.

Mr. F. A. Rogers, chemist, of 327, Oxford-street, W., has forwarded for our trial a new chloride of ammonium inhaler which is called the "Kloram." It is an ingenious device of elegant appearance, and whilst varying in some respects but little from the principles employed in inhalers of older pattern it has an effective modification which enables the chloride of ammonium vapour produced by the intermixture of solutions of ammonia and hydrochloric acid to be drawn through water before being inhaled by the patient. Mr. Rogers claims that by means of this arrangement the irritating properties of nascent chloride of ammonia vapour are removed, properties to which he attributes the disuse of the drug as an inhalant. Whether chloride of ammonium may be credited with a wide sphere of usefulness in otology and rhinology is, in our opinion, an open question, but those who are desirous of prescribing its inhalation may rely on the "Kloram" as a clean and neat appliance, which, however much it may purify the vapour, ensures its delivery in a stream of quite constant intensity.

T.—1. We regret to say that there is little chance of our correspondent's work receiving the endowment which he seeks. 2. There is no fund for the granting of such sums. 3. The Pilkington Cancer Research Endowment, in connexion with the Victoria University of Manchester, can be addressed at the University. 4. We cannot possibly guess what the attitude of the Imperial Cancer Research Fund might be, but there will be no harm in making an application.

R. A. D.—We have seen a copy of the book to which our correspondent refers, but could see no good purpose in reviewing it. Our readers are unlikely to be influenced by its silly and inaccurate statements, and the book is addressed to the general public, who are not likely to seek a corrective in a medical journal.

K. T. O.—Upon the facts which our correspondent puts before us we are of opinion that B. should offer to regard the fee as belonging to the partnership.

Omega has omitted to enclose his name, which prevents us from noticing his communication.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 27th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 21	30·08	E.	...	124	82	53	57	63	Fine
,, 22	30·11	S.W.	...	127	83	57	59	64	Fine
,, 23	30·14	S.W.	...	133	76	61	60	70	Fine
,, 24	30·33	W.	...	118	75	55	57	62	Fine
,, 25	29·74	S.E.	0·62	89	61	54	54	54	Raining
,, 26	29·52	S.W.	0·15	106	59	50	49	54	Cloudy
,, 27	29·63	S.W.	0·39	121	60	50	52	56	Cloudy

Medical Diary for the ensuing Week.

SOCIETIES.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Election of Officers for 1909-10. Clinical Cases.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—8.30 P.M., Mr. C. Ryall will open a Discussion on Spinal Anæsthesia and will illustrate his latest method with diagrams.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

TUESDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 P.M., Lecture:—Mr. H. Eason: The Pupil in Disease.

WEDNESDAY.—4 P.M., Mr. B. Corner: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. C. Mercier: On the Diagnosis of General Paralysis in its Early Stage.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. E. Wynter: Treatment of Chorea.

FRIDAY.—4 P.M., Mr. H. Barwell: Clinique (Ear, Nose, and Throat)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Cole: Acute Mania and its Treatment.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Lecture—Medical Registrar: Demonstration of Cases in Wards. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Infective Endocarditis.

SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. Mr. Harman: Diseases of the Eyes. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture:—Dr. G. P. Chappel: Demonstration of Selected Medical Cases.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. H. W. Carson); X Rays. 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carless: Fractures in the Region of the Wrist and their Treatment.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Myelitis.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.30 P.M., Special Lecture:—Dr. Rankin: The Neurotic Element in Disease.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. Sargent: Decompressive Operations.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration: Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration: Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration: Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration: Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.); St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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